

MacWEEK

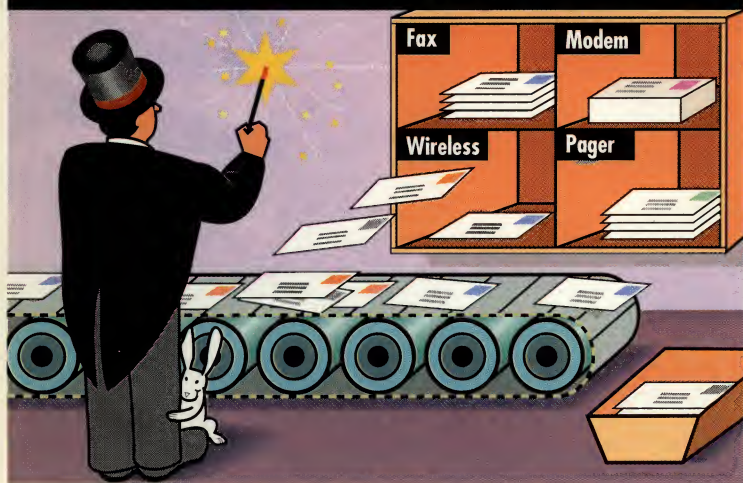
02.08.93 Volume 7 Number 6 THE NEWSWEEKLY FOR MACINTOSH MANAGERS

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Best choice for managing to-do lists
- ✓ **Network Management Sys.**
Dayna's system keeps an eye on the net
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Integrated package has rough spots

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Telescript will make magic with E-mail



NEVIN BERGER

General Magic will do its trick on Macs, PDAs

Telescript agents sort users' E-mail

By Mitch Ratcliffe

New York — General Magic Inc.'s Telescript programming language will find its first home early next year on the Macintosh and Apple's forthcoming Newton personal digital assistants. A flurry of Magic-powered handheld

devices will follow soon afterward. At a news event here this week, General Magic will announce Telescript and Magic Cap, an operating system and graphical user interface for handheld devices, previously known as Magic Mail (see MacWEEK, Jan. 25). The technologies will let users create agents to manage their communications.

The company also will announce that Sony Corp., Motorola Inc., See *General Magic*, Page 119

Apple to serve up multiport ARA

By Mitch Ratcliffe

San Francisco — Apple is aiming to seize an advantage over third-party AppleTalk Remote Access server vendors with new Mac-based software that offers enhanced security and support for multiple phone lines.

The new version of AppleTalk Remote Access (ARA) reportedly will be unveiled next month. When used on a NuBus-equipped Macintosh with Apple's \$1,019 Serial NB

Card, it will support up to four external modems. Apple also may unveil a version of the serial card that provides eight or more ports for ARA connections, sources said. The current ARA 1.0 can handle only one modem connection at a time and offers a single password per account with dial-back security.

The new server software reportedly will offer as an option the See *ARA*, Page 120

Mac III: The next generation

DSPs will add voice, telephony, video

By MacWEEK staff

Cupertino, Calif. — Finally, there's going to be a Macintosh even Scotty could use.

As previously reported (see MacWEEK, May 25, 1992), a new line of 68040-based Macs Apple plans to introduce this summer will incorporate a totally new, true 32-bit architecture, the company's Casper voice-recognition technology and a host of other innovations.

Code-named Cyclone, the new models will be the first Macintoshes with a built-in digital signal processor (DSP), full direct memory access on all peripheral buses, a new high-speed serial port, and integrated digital and analog video-in and video-out.

The line, sources said, will include two desktop designs.

► **Two storms.** The high-end Cyclone reportedly will come with the fastest '040 available at ship time, most likely a 40-MHz chip. It will have three enhanced NuBus slots and 8 Mbytes of RAM, expandable to 128 Mbytes. With an optional 2 Mbytes of video RAM, it will display up to 24-bit color on a 16-inch monitor.

The low-end Cyclone will be powered by a 25-MHz '040 and will come with 4 Mbytes of RAM, expandable to 68 Mbytes. It will accept only one NuBus card, and its display capabilities will be limited to 16-bit color on monitors up to 16 inches.

► **Mac III.** What makes the Cyclone special, sources said, is a system architecture so different from current Macintosh

designs that it has been dubbed the Macintosh III.

First, the new models will support direct memory access on all peripheral buses, including the SCSI bus. The last time Apple See *Cyclone*, Page 120

New '040 systems

- True 32-bit architecture
- DMA for peripherals
- Built-in Ethernet
- High-performance NuBus slot
- High-speed serial port
- AT&T 3210 digital signal processor
 - 16-bit digital sound
 - Voice recognition
 - Built-in telephony
- Digital and analog video-in and video-out
- Digital video expansion slot

Update for 7.1 coming soon

By Robert Hess

Cupertino — Apple reportedly is preparing to release an extension much like its System 7 Tune-Up that is designed to improve the performance and reliability of Macs running System 7.1. In addition, sources said, the company soon will deliver a separate System Enabler to support

32-bit addressing on older Macs.

Apple released the update internally to all its employees last week. Historically, public releases follow internal releases by about one week. Apple declined to comment.

► **System update.** The Macintosh Hardware System Update 1.0 is a 6-Kbyte system extension and comes with an updated Memory control panel, Version 7.1.1. Together, sources said, they address problems in four areas: high-speed serial communications, system-clock accuracy, floppy ejection during shutdown and overall system performance during low-memory conditions.

The update is recommended for most Mac models, including all PowerBooks, all Quadras, the LC, LC II, IIsi, IICi, IIfx, IIfx and Classic II. The update is not intended for the Performas, and Apple strongly advises against installing it on those models, sources said.

In recent weeks, Apple has updated See *System update*, Page 119

Tokyo rollout set for cheap '040s, new color Macs

By Raines Cohen

Tokyo — Mac users concerned about cost and color will have a field day this week as Apple ships a range of new products.

The introductions, to be held at Macworld Tokyo here, include 68040 machines at midrange prices, the first color PowerBook, a low-cost color Classic, inexpensive printers and a VGA monitor.

Apple will announce:

► **Centris line.** Apple will offer a vast array of midrange options in its new line. The Centris 610 and 650 will sell for \$1,859 to \$4,379 in configurations with and without FPUs (floating-point units) in the on-board 20- or 25-MHz '040s (see MacWEEK, Feb. 1).

► **Quadra 800.** The newest Quadra will include a 33-MHz '040 and three NuBus slots, as well as See *New Macs*, Page 119

Special report CROSS-PLATFORM



Buying, support strategies
Interoperability testing

See Page 42

NEWSPAPER SECOND CLASS

Introducing DayStar's Turbo 040™... the only 68040 accelerator that does it right!

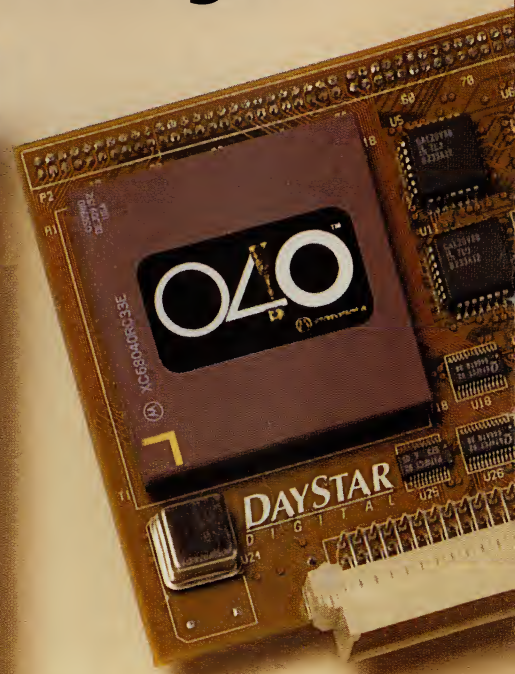
DayStar's PowerCache '030 accelerators have won nearly every editorial award in the USA, Europe and Japan. They set the standard for what an accelerator should be - fast as lightning and as compatible as if Apple did it themselves.

On top of this, DayStar puts its customers first with aggressive prices, manuals full of color photos, unlimited toll-free tech support, and upgrades to the fastest speeds, at any time and without paying a penalty.

Now, after extensive development by the DayStar engineers we are proud to offer you the Turbo 040 - a 68040 accelerator that's every bit as good as our 68030 PowerCache, only it goes like greased lightning!

OTHER 040's	DAYSTAR'S TURBO 040	
NO	YES	Plug In and Startup (No System Install)
NO	YES	Saves NuBus Slots For Other Boards
NO	YES	Compatible With All Video Cards
NO	YES	Supports Non-NuBus Macs
NO	YES	Compatible With All QuickDraw Accelerators
NO	YES	Optional 128K Cache For More Speed
NO	YES	Compatible With Apple Virtual Memory
NO	YES	Low Cost, No Penalty Upgrades
NO	YES	Compatible With Apple A/ROSE† Cards
NO	YES	Does Not Require Additional Memory
NO	YES	Compatible with Apple QuickTime
NO	YES	Free Storm PicturePress 2.5 Software
NO	YES	Compatible With AppleTalk Remote Access
NO	YES	Full AppleTalk/EtherTalk Network Support
NO	YES	Compatible With Apple MIDI
NO	YES	Full-Color Installation/User Manuals
NO	YES	Compatible With All Sound Applications
NO	YES	3 Year Warranty & Toll-Free Tech Support
NO	YES	Compatible With All Scanners
NO	YES	Compatible With Apple's "Installer" Application
90	0	Total Number of Compatibility Problems*

* As on the Macintosh® Quadra, using the Apple GC Video Card requires the user to turn off 68040 data caching. System 6 and System 7 operating systems only (A/UX not included).
† A/ROSE- Apple Real Time Operating System Environment includes Apple Coax/Twinax Card, Ethernet NB Card, MacAPPC, MACDFT, MCP Card, Serial NB Card, SNA.PS, TokenTalk NB Card.



The Turbo 040 has a built in math chip and is available in two speeds - 25 MHz (Quadra 700 speeds) and 33 MHz (Quadra 950 speeds). Like the Quadra, the Turbo 040 also has an optional 128K cache card to squeeze out every bit of performance.

Come join the DayStar way. Feel free to choose the speed you need today without worrying about missing out on tomorrow's faster boards.

With DayStar you can be an expert at working on your Mac, not making your Mac work. The Turbo 040, like the PowerCache, plugs directly into the Mac through the processor direct slot. Therefore, it's faster, you don't waste any NuBus slots, and you don't have to buy or move your memory. The Turbo 040 is a breeze to install and operate - just plug it in and turn it on! No installation or "system patches" that create incompatibilities.

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Bedrock development solid; app set for year-end delivery

By Andrew Gore

Indian Wells, Calif. — By year-end, the Flintstones won't be the only ones living in Bedrock.

The cross-platform, object-oriented application framework being co-developed by Symantec Corp. and Apple is on schedule for delivery by the end of this year, according to both companies. A few developers will be seeded with Windows and Mac versions of Bedrock in May, said Steve Levine, Symantec marketing manager for core technologies, at the Demo '93 conference here last week. The framework should go beta sometime this fall, he said.

Bedrock, like Apple's development framework MacApp, helps speed the creation and maintenance

of applications with a library of reusable component code. Unlike MacApp, a program created in Bedrock can be moved easily between the Mac and Windows.

"IS managers deal with heterogeneous environments, and the response we see from the Mac side has been tremendous," said Laura Hamersley, Apple product manager for development tools. "There's definitely a need [for Bedrock] from those customers."

Bedrock also will allow developers faster access to new Apple toolboxes as they come along, she said.

Apple and Symantec plan versions of Bedrock for other leading operating systems, including Unix, and perhaps even for personal digital assistants. □

E-Machines Duo dock hits the streets

By Carolyn Said

Beaverton, Ore. — E-Machines Inc. this month became the first third-party developer to ship docks for Apple's PowerBook Duos.

The company shipped PowerLink Presentor, a "traveling dock" that lets Duo users give color presentations on the road. Later this month, E-Machines said, it will release PowerLink DeskNet, which will offer built-in Ethernet and other ports to turn Duos into desktop machines (see MacWEEK, Oct. 19, 1992).

► **PowerLink Presentor.** This \$499 dock adds support for eight-bit video-out on large-screen displays, television sets, LCDs and projectors. The 10-ounce device

also offers ports for Apple Desktop Bus, floppy drive and stereo output.

Presenter users can run the system from the Duo's internal battery or plug the Duo's AC adapter directly into the Presenter itself.

► **PowerLink DeskNet.** The \$699 dock will include built-in twisted-pair (10BASE T) and thin (10BASE 2) Ethernet. It will let Duos display eight-bit color on RGB (red, green, blue) monitors.

The 19-ounce DeskNet also will offer ports for a floppy drive; stereo input and output; security; and SCSI, ADB and serial devices.

E-Machines Inc. is at 9305 S.W. Gemini Drive, Beaverton, Ore. 97005. Phone (503) 646-6699; fax (503) 641-0946. □

SuperMac readies bug fix to DigitalFilm

By Neil McManus

Sunnyvale, Calif. — Admitting that some users of its DigitalFilm video-production system have had serious problems, SuperMac Technology Inc. last week promised a prompt bug-fix upgrade and offered dissatisfied users their money back.

The \$5,999 NuBus board can capture, display and output full-screen, full-motion video. Version 1.1, a free hardware or software upgrade due next month, will fix bugs such as uneven audio-video lip synchronization, dropped frames during playback, system crashes during compression of noisy source material and restart problems when using settings for 17-inch displays, the company said.

SuperMac officials acknowledged

that its marketing claims unrealistically raised expectations that DigitalFilm can replace professional video equipment.

SuperMac is hiring at least four regional sales engineers who will offer free on-site support to DigitalFilm customers.

The company has raised the recommended configuration to a Quadra 950 with 64 Mbytes of RAM and a 4-Mbyte-per-second drive array. SuperMac also offered DigitalFilm owners an "unconditional," unlimited money-back guarantee and a free copy of CoSA After Effects, a \$1,295 digital-compositing package.

SuperMac Technology Inc. is at 485 Potrero Ave., Sunnyvale, Calif. 94086. Phone (408) 245-2202; fax (408) 735-7250. □

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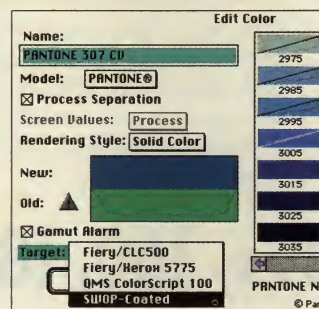
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MacCheck to monitor Performas

By Robert Hess

Cupertino, Calif. — Purchasers of Performas — and perhaps all new Macs — soon will be able to troubleshoot their computers with MacCheck, a consumer version of Apple's MacTest Pro diagnostic software, sources said.

MacCheck reportedly is intended to ease the job of Apple's Assistance Center personnel by giving users information about their system and its problems before they place a call.

Sources said MacCheck will ship with Performas beginning this month. The program, which is designed to operate with any Mac

running System 7, eventually may be bundled with all new Mac models, sources said.

Created by the Apple Service Tools Diagnostic Team, MacCheck is based on the same modular technology as MacTest Pro and can use its modules for more in-depth testing of specific CPU functions. MacTest Pro is available only to Apple-authorized service providers.

MacWEEK's examination of MacCheck shows a more user-friendly interface than MacTest Pro. Users access functions through one of two buttons:

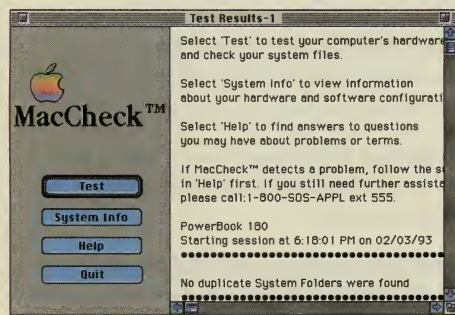
► **System Info.** Upon launch, MacCheck profiles the user's Mac, checking hardware and software versions and configurations and scanning for multiple System folders, which can cause crashes.

► **Test.** A brief series of tests verifies the proper functioning of the Mac's parameter RAM, ROM, SCSI and Apple Desktop Bus managers, as well as timing and FPU (floating-

point unit); confirms the integrity of the system, Finder and Enablers; and checks the directory structure of all mounted hard disks. Apple programmers reportedly were unable to implement some planned features, such as expanded RAM checks, in time for MacCheck's release.

When it finds minor problems, MacCheck offers brief solutions. For example, when it discovers directory damage, it offers instructions on running Disk First Aid. When more-severe problems are uncovered, users are directed to Apple's Assistance Center and given a specific extension to call and a specific type of problem to report. Since MacCheck already has performed a system profile, the user can quickly supply support personnel with important information.

Sources said MacCheck can uncover directory damage missed by other utilities. Apple's own Disk First Aid, in fact, misses or cannot correct some errors MacCheck can find, sources said. Apple reportedly will release a new version of Disk First Aid to bring it into parity with MacCheck. □



MacCheck's simple interface lets users profile their Macs and test various functions.

Apple revises Enablers for IIvx, 160, 180

Updates fix bugs, add new functions

By Robert Hess

Cupertino — Apple has updated the System Enablers for several Mac models, correcting bugs and implementing new functionality.

Enablers are system extensions designed to eliminate the need for Apple to revise system software to accommodate new CPUs. Previous-

ly, an incremental system update accompanied every new Mac model. These updates often contained bug fixes unrelated to the new model, creating confusion among managers who were unsure if they should update all their users' systems.

Apple has updated two Enablers, leaving the PowerBook Duo Enablers unchanged:

► **Macintosh IIvx and Performas 600.** These models use System Enabler 001, now updated to Version 1.0.1. According to Apple, the new

Enabler improves support for high-speed serial communications, makes of the system clock more accurate and addresses a rare problem where floppies might not be ejected properly during shutdown or restart.

► **PowerBook 160 and 180.** Version 1.0.2 of System Enabler 111 offers support for the Express Modem 160/180, which is scheduled for release this month.

Only users who have experienced problems or plan to use the Express Modem require the new versions. The updates are available on AppleLink, from Apple's Assistance Center at (800) 767-2775 and from user groups.

In related news, Connectix Corp. of San Mateo, Calif., last week released an Enabler Patch that fixes a bug present in all Enablers.

The bug causes inaccurate information to be stored in a Mac's reference tables. When this happens, programs that attempt to access the System file could be misdirected to the Enabler, resulting in a possible crash or corruption. Connectix said Fifth Generation Systems Inc.'s Suitcase was one program affected.

Apple confirmed that the bug exists and that Connectix's patch corrects the problem. The patch is available on all major on-line services. □

Mass Micro to add 160-Mbyte pocket drive

By Henry Norr

Sunnyvale, Calif. — Mass Microsystems Inc. next month will add a 160-Mbyte model to its line of pocket-size 10-ounce drives.

The HitchHiker 160, like previous 80- and 120-Mbyte models, clips directly to the SCSI port on the back of a desktop Mac and draws power from the Apple Desktop Bus port. The new version will use a Quantum GO mechanism with an average seek time of 17 milliseconds and a sustained transfer rate of 1.9 Mbytes per second.

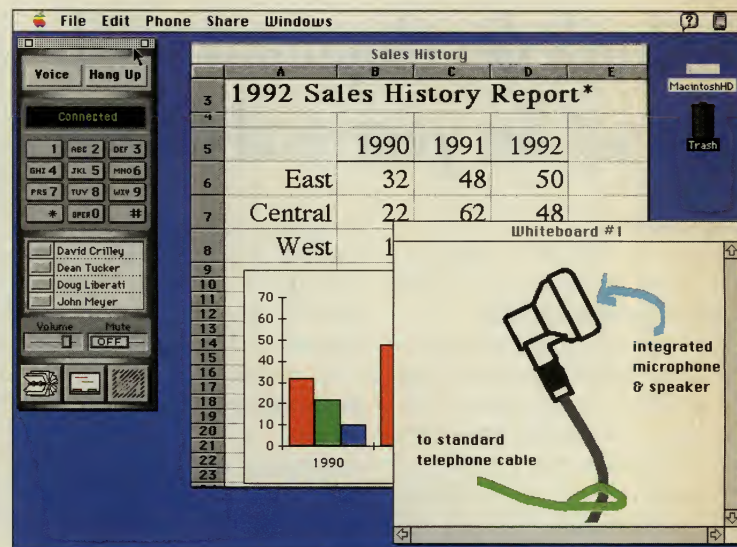
The company will offer both a standard platinum version for \$1,099 and a granite-colored ver-

sion, including an HDI-30 cable, for \$1,149. Both will carry one-year warranties, come preformatted with System 7.0.1 and include a copy of Logical Solutions Inc.'s 7th Heaven utilities collection.

According to Mass Micro, the drives also work with Eastman Kodak Co.'s DCS200 digital camera.

Early in the second quarter Mass Micro plans to add a 205-Mbyte HitchHiker based on a Seagate mechanism.

Mass Microsystems Inc. is at 810 W. Maude Ave., Sunnyvale, Calif. 94086. Phone (408) 522-1200; fax (408) 733-5499. □



ShareVision's ShareView lets users collaborate using third-party applications and share ideas on a "whiteboard," while talking over a single phone line.

New ShareVision package provides teleconferencing minus the video

By Nathalie Welch

Indian Wells, Calif. — ShareVision Technology Inc. last week announced a stripped-down version of its ShareView Plus desktop videoconferencing system that will let users collaborate on projects but not actually see their collaborators.

ShareView, slated to ship for \$1,199 later this month, will let users share ideas on a common "whiteboard," collaborate using third-party applications and engage in a screen-based phone call via a single analog telephone line.

Unveiled at the Demo '93 conference here, the system will include ShareVision's OnSight collaboration software, a 14.4-Kbps V.32.bis fax-modem card, a whiteboard application, a screen-based telephone and telephone-management software, and a telephone headset and handset.

"ShareView Plus is the sizzle but

ShareView is the steak," a company spokesman said. "We think ShareView will be [successful] because people want interactive capabilities at an affordable price."

ShareView will compete with screen-sharing software such as Timbuktu Remote from Farallon Computing Inc. and ScreenLink from Datawatch Corp. (see story, Page 12). Those programs do not offer built-in telephone communication.

ShareView owners will be able to upgrade to the \$4,499 ShareView Plus by purchasing a \$3,300 kit that includes a video-capture and video compressor-decompressor card and color video camera. ShareView Plus provides full-motion color-video and video-capture capabilities.

ShareVision Technology Inc. is at 2951 Zanker Road, San Jose, Calif. 95134. Phone (408) 428-0330; fax (408) 428-9871. □

Update! routes data via pager

By April Streeter

New York — Ex Machina Inc. last week shipped software that can transfer incoming pager messages to spreadsheet, database or other files created by Apple events-aware applications.

The \$149 Update! software creates a mailbox on a mobile user's machine into which electronic mail or other files incoming from a Motorola Inc. NewsStream pager are dropped automatically (see MacWEEK, Oct. 19, 1992).

NewsStream pagers can receive data from a variety of paging services, including SkyTel Corp.'s. The company leases NewsStream pagers for \$20 per month. Monthly

charges for sending messages average about \$60 to \$90, SkyTel said.

When used with Ex Machina's Notify! software, Update! can use Apple events to append incoming data to files created by aware applications such as Microsoft Excel, or launch alarms in a reminder program.

Notify! is \$149 for single users and \$399 for a network edition.

Ex Machina later this month will ship a \$399 gateway that will let users of CE Software Inc.'s Quick-Mail forward electronic mail to roaming Update! users.

Ex Machina Inc. is at 45 E. 89th St., No. 39-A, New York, N.Y. 10128-1251. Phone (718) 965-0309; fax (718) 832-5465. □

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SyQuest: Standardize formatting

By Henry Norr

Fremont, Calif. — Five years after it began selling its removable-cartridge hard drives in the Mac market, SyQuest Technology Inc. is moving to set a standard to guarantee interchangeability of cartridges formatted with different vendors' software.

The company, which markets its 44- and 88-Mbyte drives and media through dozens of third-party integrators, last month released a set of guidelines and a test program embodying its proposed standard.

At least one well-known drive vendor, however, is resisting SyQuest's initiative (see story below).

The problem the new standard is designed to address chiefly affects service bureaus and other sites where cartridges are exchanged among drives from different vendors. When users start up with a cartridge in place, the Mac automatically loads the driver on that cartridge into memory. If, later in the same session, the user ejects that cartridge and attempts to mount one formatted with different software, the driver in memory may not be able to handle the new cartridge. Problems such as the inability to mount the new disk, crashes and corruption may result.

In a letter to its OEM customers

last month, SyQuest acknowledged that the problem is "common" and "has led to user dissatisfaction and negative press coverage."

The company's proposed solution revolves around SCSIProbe, a freeware utility it began distributing last year. Written by Robert Polic, an engineer now at Apple, the control panel lets users scan the SCSI bus and mount devices. To solve the problem of conflicting drivers, recent versions offer options to close the current driver when a cartridge is ejected and load a driver from newly inserted media at the press of a hot key.

SyQuest's guidelines and its test application, Validator, are designed to ensure compatibility with SCSIProbe's approach. The company last month released Version 3.5 of the free utility, improving mounting and driver-closing routines.

A SyQuest-led consortium supporting the new standard includes several leading hardware vendors and driver developers. Over the next two months, SyQuest said, it will expand the consortium and publish a list of compliant drivers.

The company reportedly told vendors that it will not ship them its upcoming 3.5-inch drives unless their drivers comply with the standard. □

fully meet Apple guidelines.

Specifically, he said SCSIProbe's technique for closing drivers could cause serious problems if a cartridge with nonautomounting partitions mounted is ejected.

But Pat Allen, head of technical support at SyQuest, said FWB had misunderstood the proposal. SCSIProbe will not close the driver if any partitions on a cartridge remain mounted, he said.

He added that he knew of no reason why FWB's software couldn't qualify as compliant, even though SCSIProbe will not mount specially configured volumes or partitions. — By Henry Norr

FWB questions SyQuest's proposal

One drive and driver vendor that isn't happy with SyQuest Technology Inc.'s proposed interchangeability standard is FWB Inc.

"They're trying to solve the right problem, but they're taking an absolutely lame, lowest-common-denominator approach," said Steve Goodman, vice president of sales and marketing for the San Francisco-based company that publishes the Hard Disk ToolKit formatter series.

To comply with the proposed standard, he said, FWB as well as other companies would have to remove useful features that their software now supports and that

Update to Metropolis' MSI Access lets developers turn 4D 3.0 into a server

By Kirsten L. Parkinson

Palo Alto, Calif. — Metropolis Software Inc. now is shipping Version 1.6 of MSI Access for 4th Dimension, an upgrade that adds compatibility with 4D 3.0.

MSI Access offers developers and consultants software tools that make ACI US Inc.'s 4D database engine into a server. The package also includes externals that let developers create client applications in 4D, C, Pascal, HyperCard and TGS Systems Ltd.'s Prograph.

Metropolis said that its product offers substantial benefits and additional features over ACI US' recently shipped 4D Server in some cases.

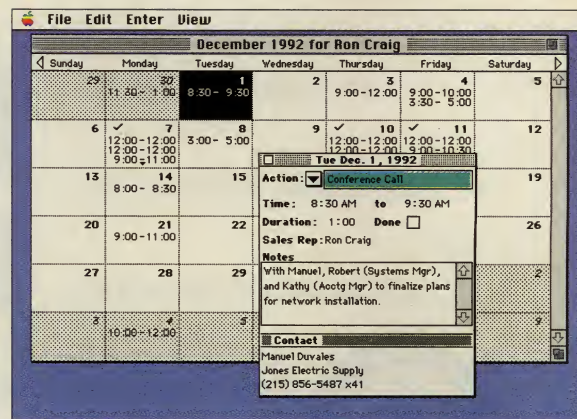
For example, MSI Access supports development of applications that require data storage on both the server and local hard disks, messaging capabilities, simultaneous access of multiple databases and/or access

of databases on multiple servers.

It also lets developers choose whether processing takes place on the client or the server, allowing faster performance than the 4D Server on slower networks such as LocalTalk and during AppleTalk Remote Access connections, Metropolis said.

MSI Access is \$495 per server; a development version that cannot be used in production applications is \$95. Upgrades are \$29; or free to users who purchased after Sept. 1, 1992. MSI Access can use the runtime version of 4D 3.0, due this month for \$195, for both the server and the client, if the client is written in 4D; the \$895 stand-alone version of 4D 3.0 is necessary only for database development.

Metropolis Software Inc. is at 505 Hamilton Ave., Suite 305, Palo Alto, Calif. 94301. Phone (415) 322-2001; fax (415) 327-5579. □



EndPoint! Leads! 2.5 includes an integrated calendar module in which activities can be associated with contact records.

Leads! contact manager merges files over LAN or ARA connections

By Raines Cohen

San Jose, Calif. — Endpoint! Marketing Information Systems Inc. last month shipped a new version of its sales-automation application, adding automatic lead-merging functions and an integrated calendar.

Leads! 2.5, based on ACI US' 4th Dimension, builds on the contact-reconciliation features in previous versions. Contacts can be merged at preset times on a network or remotely using AppleTalk Remote Access.

An integrated calendar shows to-do items and activities linked to contact records. A change made in the calendar is reflected in the database, and vice versa.

Other new features include more-

sophisticated duplicate-record detection (including phonetic comparisons) and deletion, as well as an event manager that can track event histories across multiple leads and accounts.

Leads! sells for \$595 to \$1,795 in single-user configurations, and \$5,495 to \$50,000 in multi-user packages. Users can upgrade for \$95 per copy (or apply their purchase price toward the price of a multi-user version) or for free if they purchased an earlier version after June 1, 1992. A 60-day money-back guarantee is included.

Endpoint! Marketing Information Systems Inc. is at 1230 Oakmead Parkway, Suite 210, Sunnyvale, Calif. 94086. Phone (408) 737-3831; fax (408) 738-5979. □

Course Builder gets QuickTime extension

By Neil McManus

Knoxville, Tenn. — Users now can add QuickTime movies to custom applications created in the Course Builder authoring program.

Discovery Systems International Inc. is shipping its Course Builder QuickTime Extension for \$120. The software add-on gives Course Builder users movie controls such as auto start, loop until user input, play sound only and hide movie controls.

DSI also has upgraded Course

Builder to Version 4.1 to accommodate extensions.

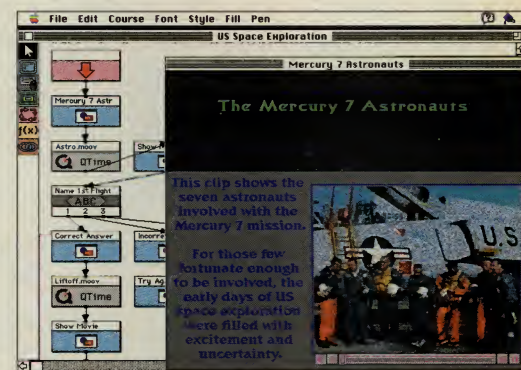
The program retails for \$1,495 or \$995 for education users. Upgrades to Version 4.1 are free to 4.0 users and \$125 for other registered users.

Course Builder, which can control a variety of VCRs and videodisc players, is designed for users

creating custom interactive training applications. DSI, a new company started by the program's development team, recently took over distribution of Course Builder from TeleRobotics International Inc., located here.

Kristi Lozano, multimedia specialist at Miami-Dade Community College in Miami, said she plans to use the Course Builder QuickTime extension to add movies to a custom landscape-design application.

"QuickTime brings up endless possibilities for us," Lozano said.



Course Builder's new QuickTime extension lets users incorporate movies into their custom applications.

"We could have a time-lapse movie of flowers blooming or we could have a movie that takes people down the path of a garden."

Lozano said she also is planning to use an upcoming DSI database extension for Course Builder to add a database of the plants of South Florida to her landscape design application.

Discovery Systems International Inc. is at 7325 Oak Ridge Highway, Suite 100, Knoxville, Tenn. 37931. Phone (615) 690-8829; fax (615) 690-2913. □

For the record

Our Jan. 11 review of Kai's Power Tools, HSC Software's Adobe Photoshop add-on product gave the wrong price. The list price is \$149, but HSC is offering a limited-time introductory price of \$99. The program does ship with a users' guide, which is basically a reprint of the contents of the on-line help, but the company plans to offer a more-extensive manual in the near future.

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		Thin+10T+FPU	\$479
Transceivers		SE/30 & IIsi	
Ether10-T AUI	\$149	Thick+Thin	\$299
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		Thick+10T	\$299
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Mac SE		3-way	\$379
3-way	\$329	3-way+FPU	\$529

Prices are suggested retail. 64K cards available.

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tectures, and all are compatible with System 7 and the Apple Ethernet driver.*

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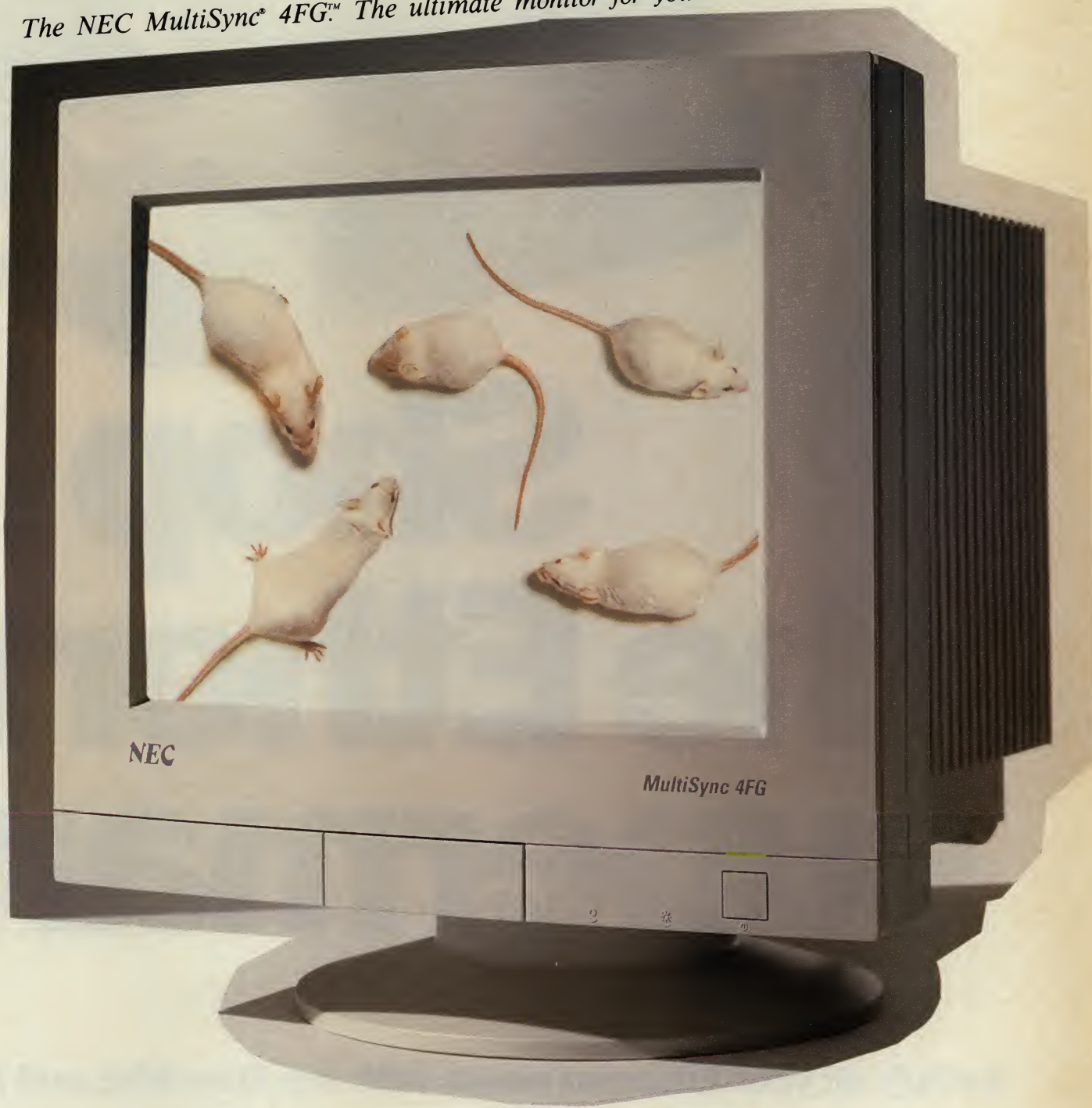
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Announcing a

At NEC, we've developed hundreds of computer products expressly for Mac systems: from our highly-acclaimed MultiSync monitors, MultiSpin™ CD-ROM readers and Silentwriter® laser printers, to our Professional Graphics Series, which includes our new 27" MultiSync 3PG data monitor and MultiSync 6PG and 9PG Projection Monitors for images as large as 25 feet.

The NEC MultiSync® 4FG™. The ultimate monitor for your Macintosh®.



*-MacUser Magazine
Aug. '92*

better mousetrap.

The least you should do for your Mac.*

The NEC MultiSync® 3FGx™ monitor.



In 1992, the only monitor to snag the coveted five-mice rating was an NEC monitor: the MultiSync 4FG. After running it and 13 others through the most rigorous technical evaluation they'd ever used for testing monitors, *MacUser* magazine concluded, "If you're looking for the sharpest display, the NEC MultiSync 4FG should be your top choice." What more can we say? Glad you asked.

Our **AccuColor™ Control System** prompted *MacUser* to make special mention of the "easy color adjustments." AccuColor lets you adjust on-screen colors, so if you're looking for mouse-tail pink, that's what you'll get.

If, however, color control is not a priority for you, you'll be very happy with NEC's MultiSync 3FGx monitor, which shares almost all of the 4FG's award-winning features. Both monitors produce sharp, bright images, crisp graphics and vibrant colors. An Invar shadow mask provides increased brightness without loss of focus.

Another big idea—the display area. The large 15" screen (13.8" active display area) coupled with FullScan™ capability for edge-to-edge images gives you a larger display area than typical 13" or 14" RGB monitors.

How do you make an NEC MultiSync monitor work with your Mac? Just plug it in, using NEC's free FG/Mac cable adapter. It works with the Mac's on-board video, so you won't need an add-in video board.*

Both monitors are compatible with the Mac® II family, Quadra™ series, LC's, PowerBooks™ and PC systems. So you can use just one monitor for both types of platforms. *MacUser* noted the "powerful and versatile controls make switching from a Mac to a PC a snap."


And to make these monitors as user-friendly as possible, we've included ergonomic features such as a tilt/swivel base and up-front user controls. Plus, our Reduced Magnetic Field™ technology meets the strict Swedish MPR II guidelines for magnetic field emissions.

There are lots of reasons for considering an NEC MultiSync monitor for your Mac—the sharp, bright images, the vibrant colors, the large display area, the flexibility, the compatibility—to name five. And the 🐭🐭🐭🐭🐭 to name five more.

For more information on our award-winning monitors, call 1-800-NEC-INFO (in Canada: 1-800-343-4418). Or for a complete brochure via fax, call NEC FastFacts™ at 1-800-366-0476, request #62234.

*For Macintosh 640 x 480 resolution, just attach NEC's FG/Mac cable adapter and plug into: Macintosh IIsi, IIfx, LC, LCII, IIfx, IIfx, Quadra™ 700, Quadra 900, Quadra 950, Performa™ 400, Performa 600, PowerBook™ 160, PowerBook 180, and the PowerBook 210 and PowerBook 230 with either the DuoDock™ or MiniDock™. Or with an add-in video card: Macintosh II, IIfx, IIfx, PowerBook 140, PowerBook 145, and PowerBook 170. Get the 640 x 480 FG/Mac adapter free by calling NEC at (312) 622-7427 8:30AM-5PM CST.

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Procom preps hard drives for LaserWriter Pro 630

Internal units hold 80-200 MBs of fonts

By Kirsten L. Parkinson

Irvine, Calif. — Procom Technology Inc. last week shipped a series of internal drives configured for the Apple LaserWriter Pro 630.

The new 2.5-inch, low-power ATOM/LW drives are available in 80-Mbyte to 200-Mbyte capacities. Prices range from \$795 to

ATOM/LW drives

CAPACITY	PRICE
80 Mbytes	\$795
120 Mbytes	\$995
160 Mbytes	\$1,195
200 Mbytes	\$1,495

\$1,495 (see chart, below).

The ATOM/LW models are identical in mechanism and performance to the company's ATOM internal drives for the PowerBook but ship with special mounting brackets and installation instructions for the LaserWriter Pro 630, Procom said.

Adding a hard drive to a printer allows users to store downloadable fonts on the printer instead of on the Mac, speeding performance.

The 80-, 120- and 160-Mbyte Quantum mechanism-based drives offer a 16-millisecond average access time and a sustained data transfer rate of 2 Mbytes per second.

The 200-Mbyte model, based on a Toshiba mechanism, provides an average access time of 12 milliseconds and a sustained data transfer rate of 3.2 Mbytes per second.

Procom Technology Inc. is at 2181 Dupont Drive, Irvine, Calif. 92715. Phone (714) 852-1000 or (800) 800-8600; fax (714) 852-1221. □

Apps put musical twist on calendaring

By Kirsten L. Parkinson

San Francisco — Users who want to rock the day away and stay organized at the same time can turn to two new calendar programs from LizardTech and BrainDance Development.

► **LizardTech** last month announced the Rock History Electronic Day-Planner and Personal Journal, which combines rock anecdotes and trivia with scheduling features.

The \$49 calendar program, due in April, will offer a split-screen format, allowing users to enter appointments and other activities in the top half and free-form notes in the bottom half.

Users can click on a button to move to the current date automatically and double-click on a monthly calendar at the top of the screen to access other days and months.

Another button takes users to the rock-history portion of the program, which includes anecdotes, trivia and quizzes for each day of the year.

The planner also includes text-searching capabilities and can export tab-delimited ASCII text.

► **BrainDance Development** last week released Daily Tripper, a \$69 personal information manager

er that includes pictures, QuickTime movies and animations of The Grateful Dead.

Written in Claris Corp.'s FileMaker Pro, Daily Tripper opens to a daily view, in which users can enter up to 10 to-do items, nine appointments and nine phone calls to make. Users can view their schedules in daily, weekly and yearly views, as well as monthly lists.

FileMaker Pro is required and not included.

LizardTech, a division of Paradigm Concepts Inc., is at P.O. Box 2129, Santa Fe, N.M. 87504. Phone (505) 989-7117; fax (505) 989-9292.

BrainDance Development is at 70-U Woodland Ave., San Rafael, Calif. 94901. Phone (415) 454-9876; fax (415) 457-0264. □



The Rock History Electronic Day-Planner includes sections for appointments, activities and notes.

TeleTypesetting sharpens up graphics converter

By Robert Hess

Boston — TeleTypesetting Co. has added compression and improved the resolution of its PostScript-to-TIFF converter.

T-Script Deluxe, a new version of the program previously called T-Script, translates PostScript files saved on Mac, VAX or IBM PC and compatible computers to TIFF or PICT formats, allowing these documents to be printed on non-PostScript printers, modified in non-PostScript applications or interchanged across platforms.

T-Script Deluxe can render images at 1,600 dpi in color or 2,400 dpi in black and white. Previously, the utility's maximum resolution was 300 dpi. Rendered images can be printed or saved as TIFF files or as lower-resolution PICT files.

The program now offers TIFF compression using LZW and PackBit methods. Products such as Aldus PageMaker can decompress these files as they are imported.

A new batch-processing feature automates the conversion of a large number of images.

Multiple Macs on a network now can use a single copy of T-Script Deluxe. When one user runs the program, other users can "print" to that copy over the network.

T-Script Deluxe sells for \$495, a \$350 increase from T-Script. Users who have purchased T-Script in the last 60 days can receive a free upgrade. Other users can upgrade for \$195.

TeleTypesetting Co. is at 311 Harvard St., Brookline, Mass. 02146. Phone (617) 734-9700; fax (617) 734-3974. □

MediAlive offers travel tips on disk

Sunnyvale, Calif. — MediAlive this month released a travel-guide disk to help PowerBook business users explore unknown territories.

NavigaTour includes maps, modem and fax dialing directories of hotels, and other road necessities, slides and text that attempt to make business travelers feel at home on the road.

Users can customize the \$129 program by inserting their own sounds, slides and movies.

MediAlive is at 766 San Aleso Ave., Sunnyvale, Calif. 94086. Phone (408) 752-8500; fax (408) 752-8501. □



News

B R I E F S

PLI delivers internal CD-ROM drives

Fremont, Calif. — Aiming to fill the hole left by Apple's CD-ROM drive shortage, PLI last week shipped an internal drive that fits the Performa 600, Mac IIvx, and Quadra 900 and 950.

The \$843 PLI CD ROM MS Internal is based on a Toshiba mechanism and offers an average access time of 200 milliseconds, 95 milliseconds faster than Apple's Sony-based drive. It has a sustained data transfer rate of 330 Kbytes per second for nonaudio data and 150 Kbytes per second for audio data.

PLI's drive supports common CD formats, including multisession Kodak Photo CD, and comes with PlayCD, a HyperCard program for playing audio CDs on a Mac hooked up to speakers.

PLI is at 47421 Bayside Parkway, Fremont, Calif. 94538.

Phone (510) 657-2211 or (800) 288-8754; fax (510) 683-9713.

Mobius 030 accelerator for SE speeds up to 33 MHz

Emeryville, Calif. — Mobius Technologies Inc. this month will release a 33-MHz version of its Mobius 030 Accelerator for Mac SE.

The card, which also delivers monochrome graphics at resolutions of up to 1,024 by 826 pixels, will be priced at \$599. Mobius will continue to offer a 25-MHz version of the board for \$399; users of the 25-MHz model can upgrade to the 33-MHz version for \$249.

A 33-MHz 68882 math coprocessor is a \$149 option; a 25-MHz version is \$99.

The boards feature four SIMM sockets. With Connectix Corp.'s \$99 Virtual 3.02 software, users can access up to 16 Mbytes of RAM or use a mix of SE logic-board and card-based RAM.

Mobius Technologies Inc. is at 5835 Doyle St., Emeryville, Calif. 94608. Phone (510) 654-0556 or (800) 669-0556; fax (510) 654-2834.

4D Toolkit 1.1 includes automatic record selection

New York — Options Computer Consulting is aiming to make it easier for application developers to create custom databases using 4th Dimension.

The company last month shipped Version 1.1 of 4D Toolkit, its user-interface tool kit for ACI US Inc.'s 4D. The \$295 application-development shell is compatible with both 4D 2.2.3 and 3.0.

New features of 4D Toolkit include automatic selection of records in one file based on another and automatic set creation when searches are performed to help users do complex searches.

Upgrades are \$99, or \$15 if Version 1.0 was purchased after May 30, 1992.

Options Computer Consulting is at 228 Bleecker St., No. 19, New York, N.Y. 10014. Phone (212) 645-3577 or (800) 736-3577; fax (212) 633-0336.

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I-MEGA®

Snow's Atlantis to import graphics files

Report writer shares engine with original

By Lisa Picarille

Clearwater, Fla. — Snow Development Group is adding a new level to its report-writing program.

The company recently announced Atlantis, a high-end data-publishing product based on Snow Report Writer.

Atlantis will use the same engine as Snow Report Writer, a Macintosh stand-alone report generator released last year, but it will go further, allowing users to import graphics and logos, as well as modify text attributes.

Like Snow Report Writer, Atlantis will let users import data in

a variety of file formats, including those created with word processors, databases, spreadsheets and accounting programs. Atlantis, however, also will let users import a variety of graphics file types, including PICT and TIFF.

Graphics brought into Atlantis will be resizable, and users will be able to create simple shapes, such as circles and boxes, as well as add fills and patterns to graphic elements, within the program.

The \$895 program, due to ship by the end of the first quarter, also will let users combine multiple data formats into a single report and combine data from two reports.

Users who purchase Snow Report Writer 4.0 for \$595 before the end of the quarter (\$695 there-

after) will receive a free upgrade to Atlantis. The company said it also is planning an upgrade path for current users of the Snow Report Writer, although upgrade pricing is not yet set.

The Snow Report Writer is being sold as the Report Writer module for Great Plains Software's accounting suite. Softsync Inc. of Coral Gables, Fla., also includes a version of Snow Report Writer in Accountant Inc., its integrated accounting package.

Snow Development Group is at 2360 Congress Ave., Clearwater, Fla. 34623. Phone (813) 784-1845; fax (813) 787-1904. □

New Wallpaper patterns help users redecorate desktops, PBs

By Henry Norr

New York — Thought I Could, the company that thought it could build a business by offering Mac users a way to decorate their desktops, now thinks it can market a wider line of Wallpaper-related products.

The company last month announced three new products based on Wallpaper, a control panel that lets users import, create, edit, preview and install colorful desktop patterns up to 128 by 128 pixels in size. According to the company, the product requires a maximum of 21 Kbytes to display a color pattern.

▶ **Wallpaper/Zebra**

Edition, due next month, is a special version designed for users of color-capable Macs with monochrome monitors, including PowerBooks (except the PowerBook 100), the Classic II and the SE/30. Priced the same as the standard version at \$59.99, it will come with several hundred black-and-white patterns, the company said; current Wallpaper owners can purchase the new patterns from Thought I Could for \$15.

▶ **More Wallpaper**, available now at \$39.99, is a collection of additional patterns that can be installed and modified with Wallpaper. The patterns, which include Egyptian tomb-painting and Navajo-blanket designs and images of dinosaurs,

penguins and spaceships, were previously available on the company's subscription and bonus disks.

▶ **Wallpaper Wraptures Two**, a \$19.95 floppy disk available only to registered Wallpaper owners, contains hundreds of patterns drawn from Wraptures Two, a CD-ROM recently released by Form and Function of San Francisco. The patterns represent natural textures, such as stones, wood, paper and foods.

Wallpaper requires a color-capable Mac and System 6.0.5 or higher.

Thought I Could is at 107 University Place, Suite 4D, New York, N.Y. 10003. Phone (212) 673-9724; fax (212) 260-1194. □



New add-on packages from Thought I Could will let Wallpaper users install such patterns as these jelly beans, from the Wallpaper Wraptures Two disk.

Datawatch repacks Microcom wares

By Henry Norr

Durham, N.C. — Datawatch Corp., new owner of the Mac utilities previously marketed by Microcom Inc., has renamed, repriced and reconfigured its products.

▶ **Screen-sharing utility.** The remote-control and file transfer package formerly known as Carbon Copy Mac is now called ScreenLink. It is available in two packages; the Twin Pak, priced at \$99, includes software for two Macs, which can be connected over a LAN or via modem; the Zone Pak, priced at \$299, provides a ScreenLink license for any number of Macs on a single zone of an AppleTalk network.

▶ **Data-protection collection.** A new package called Datawatch SuperSet Utilities has replaced the former Microcom Value Pak.

The package, reduced to \$149, includes two copies of ScreenLink; the 911 Utilities, a package of file-recovery, disk-repair and defragmentation tools; Complete Undelete, a control panel that lets users recover accidentally deleted files without leaving their application; the company's Virex anti-virus package, now including the Virex detection and repair application as well as the Virex INIT protection extension; Citadel with Shredder, a set of security tools that provides access control, file encryption, screen locking, password protection or disabling of floppy drives, and secure erasing of confidential data.

The 911 Utilities and Complete Undelete no longer will be offered separately, Datawatch said.

Datawatch Corp.'s Triangle Software Division is at P.O. Box 51489, Durham, N.C. 27717. Phone (919) 490-1277; fax (919) 490-6672. □



FROM THE Bookshelf

In this new occasional feature, MacWEEK will present thumbnail descriptions of selected books of interest to Mac managers and users. The titles listed here are not necessarily recommended by MacWEEK, but we think you may find them helpful.



Gates: How Microsoft's Mogul Reinvented an Industry — and Made Himself the Richest Man in America

By Stephen Manes and Paul Andrews

A biography of Microsoft Corp. founder Bill Gates. Based on extensive interviews with Gates and many others, including Ross Perot.

\$25; 534 pages
ISBN 0-385-42075-7

Doubleday & Co.
666 Fifth Ave.
New York, N.Y. 10103

Phone (212) 765-6500, Ext. 9479
or (800) 223-6834, Ext. 9479
Fax (212) 492-8903

The Little System 7.1 Book

By Kay Yarbrough Nelson

Aimed at beginning Mac users, this book offers step-by-step instructions for a variety of functions, including using the Finder, working with icons, installing fonts, and printing and setting up a hard disk. Also covers customizing the desktop, starting programs, opening documents and networking.

\$12; 150 pages
ISBN 1-56609-031-8

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Berkeley, Calif. 94710

Phone (510) 548-4393
or (800) 283-9444
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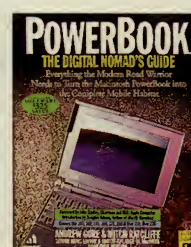
By Scott Beamer

Offers basic instructions for the MacInTax income-tax calculation program, as well as tips on how best to organize data in MacInTax and take advantage of its entry methods. Also contains advice on importing tax data from money-management programs.

\$19.95; 338 pages
ISBN 0-07-881886-9

Osborne/McGraw-Hill
2600 10th St.
Berkeley, Calif. 94710

Phone (510) 549-6600
or (800) 227-0900
Fax (510) 549-6603



PowerBook: The Digital Nomad's Guide

By Andrew Gore and Mitch Ratcliffe

This guide to Apple's PowerBook line, including the 160, 180 and Duo models, covers networking, optimizing battery life, computing in foreign countries, faxing and memory expansion. Comes with a disk of utilities, demonstrations and freeware.

\$24; 348 pages
ISBN 0-679-74588-2

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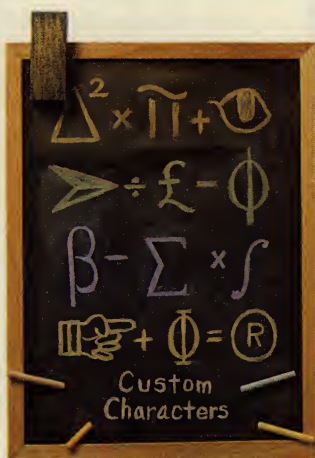
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Professional has the full capabilities to *accurately* scan virtually any document into almost any word processor, spreadsheet, or database file. So you can use *OmniPage* Professional to accurately scan newspaper articles, business reports, journals or legal documents. It's not surprising then that 8 out of 10 scanners in the world have shipped with a

trial version of *OmniPage*, including those from Hewlett-Packard, Epson, Microtek,™ and Apple. Why would they be any different than the rest of us?

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Business Management Toolkit keeps track of plans

By Jon Swartz

Eugene, Ore. — Palo Alto Software Inc. last month shipped Mac and DOS versions of Business Management Toolkit 2.0, its business-planning software.

The \$149.95 product is a template that imports files from Microsoft Excel or Lotus

Development Corp.'s Lotus 1-2-3, either of which is required to run the program.

Business Management Toolkit offers a simple way to keep track of a plan from conception to implementation, a company spokesman said.

It features business budgeting, milestone

tracking, management and follow-up.

Business Management Toolkit assigns an "owner" for each budget item, and that user is responsible for implementing specific programs and budgets by certain dates. The manager tracks the progress of the project by reading data from spreadsheets.

The program also includes extensive training materials, showing users how to link budgets to corporate strategy, tactics and programs.

Palo Alto Software has dubbed this Version 2.0; a previous version was developed for Apple for its internal use, according to the company.

Palo Alto Software Inc. is at 2641 Columbia St., Eugene, Ore. 97403. Phone (503) 683-6162; fax (503) 683-6250. □

Ellipsis connecting LabVIEW to Oracle DBs

By Raines Cohen

Boston — Instrumentation control systems now can tap into host SQL databases with a new Virtual Instrument library.

Ellipsis Inc. last month announced Medium, an add-on for LabVIEW, the \$1,995 scientific programming environment from National Instruments Corp. of Austin, Texas.

The \$495 library includes LabVIEW VIs that embed the Oracle Call Interface command set within LabVIEW packets for transmission to Oracle host databases.

It also includes Database Manager, which lets users interactively log in to an Oracle database, create and delete tables, determine the names and data types of table columns, perform ad-hoc database queries, and maintain host databases. Detailed examples also are included.

Medium originally was developed as an in-house tool at C.S. Draper Laboratory Inc., a Cambridge, Mass., research laboratory.

Ellipsis said the package is aimed at developers of information-intensive applications such as computer-integrated manufacturing, laboratory-information management, quality-control systems, and distributed processing and control.

Medium requires 10 Mbytes of RAM, LabVIEW 2.2, and Oracle's SQL*Net 1.5 (with appropriate networking extensions) or Oracle 2.0.

Ellipsis Inc. is at 92 Worcester St., Boston, Mass. 02118. Phone and fax (617) 236-0141. □

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■ Grimes Aerospace is using **TCPAxxcess™**, 5250 emulation software to link Macintosh to the AS/400® through a TCP/IP network for terminal services and file transfer. The result is accessible IBM data with point-and-click ease using Mac spreadsheet and desktop publishing programs.

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Management

Justifying Mac purchases when looking at the budget

Managers must defend the Mac as a strategic and technical advantage. Are they succeeding?

By Eric J. Adams

For years, Mac managers had it relatively easy: Economic times were good and Intel-based machines were stuck in the medieval DOS period. While the Mac has never been an easy sell to corporate management, the platform had distinct advantages over the IBM PC and compatible alternative, justifying the additional expense.

But is that still true today? Faced with tightened budgets and encroachment by the Windows and OS/2 platforms, Mac managers are being forced to take a new approach to justifying the Mac. They must defend the Mac as a strategic and tactical advantage for their companies. And according to Mac managers we spoke with, their efforts are meeting with varying degrees of success.

"We've never had too hard a time selling the Mac because upper management believes in the right tool for the right job," said Bill Cook, technical adviser in the technical resources division of Pitney Bowes Inc., based in Stamford, Conn.

"The argument is that the Mac is more expensive, but it's not more expensive. Once you've taught users one program, they have 80 percent of what they need to know how to run other programs," Cook said.

Reiterating that need. While the argument is as old as the Mac

itself, it's still true and needs to be repeated to upper management, according to Ray Craft, manager of strategic planning at Weyerhaeuser Co. of Federal Way, Wash. "We've seen a significant savings in the training area. We don't have to send people off to Windows classes just so they can use their computers," Craft said.

Craft's long list of superior features found on the Mac includes out-of-the-box network capability, compatibility among programs and messaging. And the old knock against the Mac — that it doesn't fit well in the PC environment — slowly is fading away. "We're installing quite a few LAN Manager 2.1s, and the Mac fits in very nicely," Craft said.

"The Mac is part of our very aggressive strategic planning because it enables us to do what we want in a relatively short time," he said. "It's not difficult to sell that idea."

Strategic integration ease.

For Eastman Chemical Co., the strategic importance of the Mac comes from its ease at integrating data, according to Roger Todd, advanced information technology analyst in Kingsport, Tenn. "People at our company choose the Mac because of the need to integrate information from a variety of sources: statistics, word processors,



MARK PERLSTEIN

spreadsheets," he said. Integration isn't nearly as seamless on the Windows platform, despite Windows' features such as OLE (Object Linking and Embedding) and Dynamic Data Exchange, Todd said.

Eastman Chemical's big strategic push is toward PowerOpen and PowerPC, for even greater integration, he said.

Other advantages abound.

Todd, as well as other Mac managers, also cite the Mac's cross-application compatibility, ease of system management and, of course, its graphical user interface, as advantages when arguing in the Mac's favor. "When you install something on the Mac, it works," Cook said.

While these are important features, are they strategic advantages? Not all Mac managers are convinced they are.

David Gutierrez, programmer at the University of Texas, M.D. Anderson Cancer Center in Houston, concedes that Macs are playing an indispensable role in his enterprise; programmers have developed a custom application delivering X-rays, MRIs, EKGs and other visual medical test results to Macs in doctors' offices. "We couldn't do it without the Mac," Gutierrez said. And the center's Instruction Development Department uses the Mac to author presentations and training materials.

"But we're starting to have some reservations about the Mac for the long term," Gutierrez said. His reservations are not based on the Mac's capability but on Apple and its policies. "We've had real problems physically getting the Macs we need. And we're not getting answers from Apple on site licenses for System 7.1, TCP/IP and other necessities," he said.

These factors make it difficult for Gutierrez to defend the Mac when the center drafts its long-term strat-

egy. "It's hard to argue for a platform when you're not sure if you can get boxes."

No go at Esso. At Esso, the Calgary, Alberta, subsidiary of Imperial Oil, analysts couldn't find a strategic advantage sufficient enough to continue justifying the Mac, according to Steve Suche, senior systems analyst.

"We like the Mac. MultiFinder is a far better system than Windows. We like [the Mac's] color and sound capabilities. We've been doing voice annotation since 1988," Suche said.

"But these are not strategically advantageous features. When you compare the Mac to the Windows platform, what you're left with is built-in networking as the Mac advantage. But the biggest complaint we have from our users is how slow LocalTalk is."

The inability to isolate a strategic advantage has prompted Esso to "let the Mac die of attrition," Suche said. "The strategic advantages are growing fewer, and it's getting more expensive to maintain two platforms. It's hard to justify it."

Meanwhile, Suche said, Windows and OS/2 have gained some strategic advantages over the Mac. "We have centrally stored and managed facilities. Windows NT and OS/2 support that better."

When Esso ran the figures for updating the company's 13,000 Macs or going with newer, cheaper PCs, the company had no choice but to go with PCs. It was strictly a numbers decision.

A decision for all? So can Mac managers effectively argue "strategic advantage" to justify Mac purchasing?

"If you consider ease of use, compatibility, messaging and consistency strategically important," Cook said, "then the answer is yes." □

David Gutierrez, programmer at the University of Texas, M.D. Anderson Cancer Center, said that while Macs play an indispensable role in his enterprise, he and his colleagues have some growing reservations about the long-range use of Macs based largely on some specific Apple policies.

Calendar of Events

FEBRUARY

15-19 MADACON '93, San Diego. Fourth annual object-oriented developers conference. Contact MADA at (408) 253-2765; fax (408) 253-2767.

16-18 Mobile93, San Jose, Calif. Portable systems show covering personal communicators, digital assistants, wireless messaging and pen-based computers. Contact Technologic Partners at (212) 696-9330; fax (212) 696-9793.

16-19 ATXPO 93, Santa Clara, Calif. The theme of this conference and exhibition is "PostScript Language Technology and Beyond." Contact Adobe Technology Exchange (ATX) at (408) 562-6104 or (800) 446-5622; fax (408) 562-6381.

18-19 Media '93, Los Angeles. Multimedia conference and exposition. Contact World Expo Corp. at (508) 879-6700 or (800) 225-4698; fax (508) 872-8237.

18-19 Macintosh Marketing Conference, San Francisco. Co-sponsored by Apple, this will cover marketing issues for salespeople, managers and marketing professionals. Contact Sumeria Inc. at (415) 904-0811; fax (415) 904-0888.

24-26 Electronic Photography and the Macintosh, Rochester, N.Y. Seminar covering electronic cameras, desktop scanners and editing processes. Contact the Rochester Institute of Technology at (716) 475-5000; fax (716) 475-7000.

25-27 Digital '93, Washington, D.C. Digital imaging conference and training sessions with speakers David Nagel of Apple and Walter Bender of MIT Media Lab. Contact the National Press Photographers Association at (202) 861-8553 or (800) 289-6772; fax (202) 786-2756.

Please submit notices of conferences, trade shows and other Mac-related events to *Calendar, MacWEEK*, 301 Howard St., 15th Floor, San Francisco, Calif. 94105, or fax to (415) 243-3651. No training or educational seminars please.

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	JAN	FEB	MAR	APR	MAY	JUNE
LANAI						
Hours of daylight	11:02	11:27	12:01	12:37	13:07	13:23
Afternoon temperature (°F)	73°-78°	73°-78°	73°-78°	73°-78°	75°-90°	77°-80°
MIDDLEBURY						
Hours of daylight	9:19	10:27	11:54	13:25	14:44	15:26
Afternoon temperature (°F)	9°-35°	30°-33°	40°-46°	55°-60°	68°-71°	76°-82°
RONDA						
Hours of daylight	9:55	10:49	11:58	13:09	14:10	14:42
Afternoon temperature (°F)	9°-66°	33°-72°	39°-72°	44°-78°	50°-85°	50°-95°

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continued page 2

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8. Insect repellent/bite ointment
9. Heavy-duty tape

Leave Jet Lag Behind

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Here are six simple steps
that you can take to help
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to depart, so you can check in
and get settled with time to
spare. If you board a cool air-
plane when you're overheated,
the abrupt temperature change
can increase your chances of
feeling unwell.

2. **Adjust your timing.** As soon as you take off, set your watch to your destination's time zone. It's a simple way to get mentally prepared for arrival.

3. **Stay hydrated.** Alcohol is much more potent in air than on the ground. Drink plenty of water.

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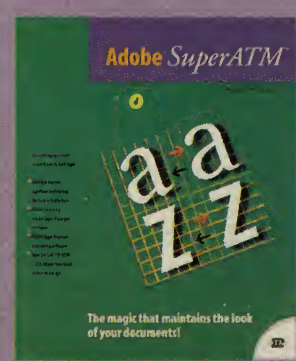
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Biscom invites Macs to join fax net

Inbound fax routing due in upgrade

By Nathalie Welch

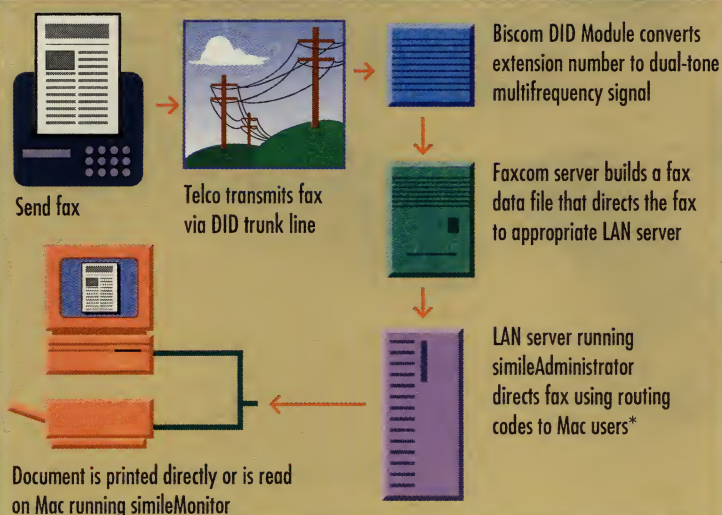
Billerica, Mass. — Biscom Inc. next month will embrace Mac users in its cross-platform network fax scheme and by summer plans an upgrade that will automatically route incoming faxes to the recipient's desktop.

Faxcom for Macintosh, due in March, consists of a fax server as well as Mac client and server software called simileFAX for Faxcom. The fax server appears in the Chooser as a network laser printer, and users can simply invoke the Print command to send faxes.

simileFAX for Faxcom, developed by Simile Software Co. of Ipswich, Mass., costs \$1,995 per server, plus \$200 for 10 users. Biscom fax servers that include a PostScript option range in price from the single-line \$7,495 Faxcom Publisher to the \$22,495 Faxcom 5000, which can support up to 16 phone lines.

The server portion of simileFAX for Faxcom, simileAdministrator, resides on a nondedicated Mac on the network and lets an administra-

Biscom's plan for Mac fax delivery



* LAN transport method still to be determined.

tor control the Faxcom for the Macintosh environment. The client portion, simileMonitor, offers a variety of standard faxing features such as background operation and scheduling of transmissions.

Distribution of incoming faxes is handled by the network administrator, who must bring up a received fax from a queue and append the intended receiver's name to the

body of the fax. The user then runs the simileMonitor application to receive the fax over the network.

An upcoming software release planned for this summer will take advantage of the DID (Direct Inward Dial) option already available as an add-on to Biscom's Faxcom 3000 and above servers. Inbound routing will deliver incom-

See Biscom, Page 22

ARAClient back as ARAConnect, offers direct access to documents

By Nathalie Welch

Middletown, Ohio — Bearing a new name and added features, ARAConnect, an ARA client add-on, this month will make the leap from shareware to the commercial market.

Priced at \$29.95 from Trilobyte Software, ARAConnect is a control panel document that creates mini-applications called Connectors, which can be used to connect to specific AppleTalk Remote Access (ARA) servers when launched.

Formerly called ARAClient and available on-line since September, the new program can create Connectors capable of opening an unlimited number of items at connect time, including documents, applications, folders and volumes.

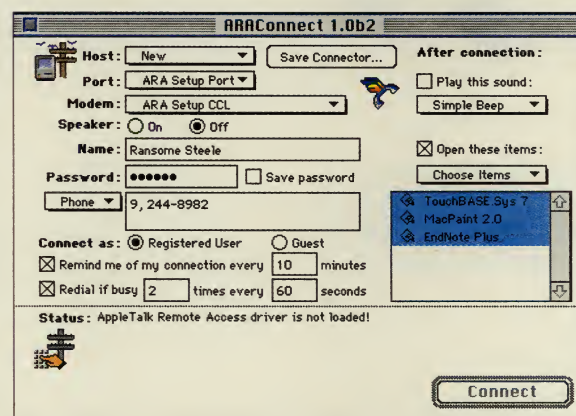
ARAConnect is intended to be used in place of the remote-access application provided by Apple. It does require Apple's \$199 ARA software and System 7.

Apple's package requires 230 Kbytes of RAM, while ARAConnect performs the same functions via a control panel using just 60 Kbytes, according to Trilobyte President Ron Duritsch.

Other enhancements to the Connector miniapplications include the capability to get a sound alert signifying a connection, as well as the capability to prompt users for phone number prefixes at launch time. Users still can select an alias for each Connector from within the ARAConnect control panel and run the ConnectNot miniapplication to disconnect from any remote network.

Trilobyte is offering an introductory price of \$19.95 through March 31. Group pricing starts at \$149.95 for a 10-pack. Registered users of ARAClient can upgrade free.

Trilobyte Software is at 6982 Devon Drive, Middletown, Ohio 45044. Phone (513) 777-6641. □



ARAConnect, which can be used in place of Apple's AppleTalk Remote Access client program, can create Connectors capable of opening any number of items at connect time.

TechWorks NuBus card turns Macs into 12-port hub

By April Streeter

Austin, Texas — TechWorks Inc. last week shipped a NuBus card that lets a Macintosh double as a 12-port Ethernet hub.

The \$749 HubWorks 12 includes an Ethernet adapter board that plugs into any NuBus-compatible Mac and an external box that has 12 RJ-45 ports and a

thin-net connector to plug into an Ethernet network.

The card's controller lets the host Mac be a 13th node, and Mac-based software provides basic port management. The card can be installed in server or client machines and should not affect performance, according to the company.

TechWorks also shipped a \$545

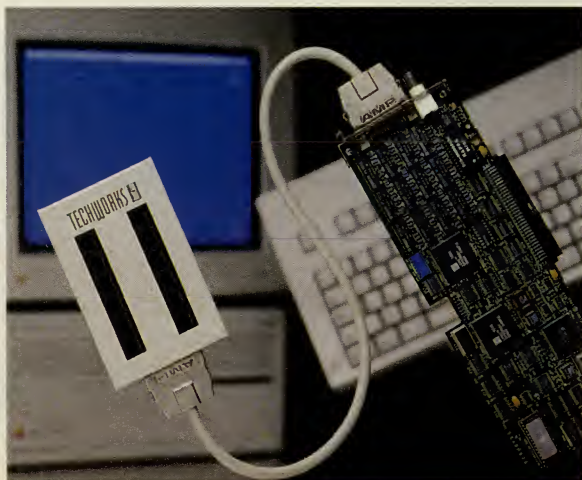
expansion box that daisychains to the HubWorks system and provides 12 extra ports. A total of 36 ports can be fastened to each Mac.

Later this month, PCon Inc. of San Jose, Calif., will ship a similar hub card, the \$595 Network Controller. PCon said it also will provide Micro Channel and AT-compatible hub cards to support IBM PCs and compatibles.

One beta tester had a mixed reaction to the TechWorks card.

"It works perfectly. And if you have PowerBooks that need to have an easy place to plug in, this product has advantages," said David Kaminisky, a network administrator at Savannah Color Separation in Savannah, Ga. "In the end it just made me too nervous, however, to have something connected to the [Mac] that could be separate."

TechWorks Inc. is at 4030 Braker Lane W., Suite 350, Austin, Texas. Phone (512) 704-8533; fax (512) 794-8520. □



The HubWorks 12 Ethernet card from TechWorks turns any Mac into a 12-port network hub. Expansion boxes can be daisy-chained to expand the hub's capacity to 36 ports.

Go fast now or V.FAST later?

By Nathalie Welch

Washington — A speed war has broken out in the modem industry, and Mac users will have to choose sides.

A group of 18 telecommunications vendors, including Global Village Communication Inc., last month formed a consortium to promote a new high-speed modem modulation scheme, V.32terbo, to let modems operate at 19.2 Kbps. V.32terbo breaks the current limitation of data-transmission speed, 14.4 Kbps, offered by devices supporting the CCITT V.32bis standard.

Modems supporting the new speed

already have been announced and will be available as soon as next month.

The consortium is pitching the fledgling specification as an interim step until the Consultative Committee International Telegraph and Telephone approves the long-awaited 28.8-Kbps V.FAST standard. CCITT has been reviewing the V.FAST proposal for two years and doesn't expect to complete work before the end of the year.

More than 60 vendors last week here re-emphasized their support of V.FAST, including Dove Computer Corp., Supra Corp., PSI Integration Inc. and Hayes

See Terbo, Page 22

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ALL THE RIGHT CONNECTIONS™

Prometheus brings voice to PowerBooks

By Nathalie Welch

Tualatin, Ore. — Prometheus Products Inc. next month will ship an internal fax modem that lets PowerBook users manage fax, data and voice-mail traffic over a single phone line.

The Ultima Home Office for PowerBook consists of an internal ProModem 144i modem; Mac-Knowledge data communications

software; and MaxFax voice and fax software, which also provides line switching. The package is available at \$399 until June 30, when the price will rise to \$499.

► **Voice.** The device turns the PowerBook into a digital answering machine, letting callers dial into a main mailbox containing an initial greeting. Touch-tone options direct callers to up to 999 password-

protected mailboxes, each with its individual outgoing message.

► **Fax.** Capable of sending and receiving faxes at 14.4 Kbps, the Ultima Home Office responds to the standard fax calling tone or a caller's fax access code to receive faxes and can wake a sleeping PowerBook to receive. Other fax features include smart resend, which restores transmissions at the point they were interrupted, and gray-scale and color output.

► **Data.** The Ultima Home Office for PowerBook incorporates Prometheus' ProModem 144i, a Hayes-compatible V.32bis modem capable of 14.4 Kbps. The modem, without voice capabilities, is available separately for \$349. A voice upgrade will be available next month for \$25.

The Ultima Home Office for PowerBook is compatible with all 100-series PowerBooks.

Prometheus Products Inc. is at 9524 S.W. Tualatin Sherwood Road, Tualatin, Ore. 97062. Phone (503) 692-9600; fax (503) 691-1101. □

Miramar connects Mac, Windows

By April Streeter

Santa Barbara, Calif. — Miramar Systems Inc. next month will release software that lets Macs share files with Windows users.

Personal MacLAN Connect, due in March for \$199, makes the drive of a Windows computer available to Macs on a LocalTalk, EtherTalk or TokenTalk network. A network interface card is required, and Miramar said it will support LocalTalk boards from Farallon Computing Inc., Dayna Communications Inc. and DayStar Digital Inc.; Ethernet adapters from 3Com Corp.; and token-ring cards from IBM Corp. or those compatible with IBM's.

Unlike Miramar's \$695 MacLAN Connect Gold server software, which supports unlimited users connected to a single server, the Personal version is designed for small workgroups that want to make the file resources of a single or a handful of Windows machines available to a Mac network.

The software also lets Mac users access PostScript printers attached to IBM PCs and compatibles running Personal MacLAN Connect, while Windows users can print to PostScript printers on the Mac side.

Miramar Systems Inc. is at 201 N. Salsipuedes, Suite 204, Santa Barbara, Calif. 93103. Phone (805) 966-2432; fax (805) 965-1824. □

Circuit plans DID for FlexFAX

By Henry Norr

Nashua, N.H. — Circuit Research Corp., developer of the FlexFAX line of network fax modems, is readying an add-on package that can automatically route incoming faxes directly to the intended recipient's Mac.

FlexFAX DID (Direct Inward Dial) interface will work with the FlexFAX modems and the software bundled with them, 4-Sight FAX from British vendor 4-Sight International Ltd.

A rack-mountable hardware module attached to the phone line will intercept the unique digits identifying each user on a DID system and forward them to the Mac functioning as the 4-Sight FAX server; a new system extension and application running on the server will receive the number, check it against a database of users and then forward the message across the LAN.

The DID interface units can be expanded to support multiple-modem fax servers. The software will allow users to add password protection to limit access to incoming faxes.

The DID interface package is due next month. FlexFAX modems start at \$799; the 4-Sight FAX software starts at \$749 for a five-user system. The products are cov-

ered by a two-year warranty, including free software updates.

The company also said it will offer a \$250 tool kit, developed by 4-Sight, that allows developers to build fax capabilities into databases and other applications.

Circuit Research Corp. is at 2 Townsend W., Suite 6, Nashua, N.H. 03063. Phone (603) 880-4000; fax (603) 880-8297. □

Biscom

From Page 20

ing faxes directly to the intended receiver's desktop without intervention from an administrator. The DID option will start at \$7,995.

Simile Software has not determined how it will transport faxes from a LAN server to end users. Possibilities include an editable protocol router or an electronic-mail facility.

A Faxcom server can be physically connected to Ethernet and token-ring networks or directly attached to the Mac's serial port. Supported network protocols include AppleTalk, TCP/IP and X.25.

Biscom Inc. is at Forest Research Park, 85 Rangeway Road, Billerica, Mass. 01862. Phone (508) 670-5521; fax (508) 671-0095. □

Terbo

From Page 20

Microcomputer Products Inc.

Some V.FAST supporters may still offer 19.2-Kbps modems. Others, such as PSI, will not. "I think the window of opportunity to market 19.2 modems will be very small," said PSI President Bill Lauer. V.FAST proponents also said the V.32terbo standard stretches the capabilities of V.32 technology beyond its design limits. But one of V.FAST's most ardent supporters disagreed.

"I think that vendors rallying around an interim standard is a very fair thing to do, and V.32terbo is a good approach to doing it," said Dick Stuart, vice president of technology for Penril Datacomm Networks in Gaithersburg, Md. Stuart, also chairman of the V.FAST Rapporteur Group for CCITT, said his company will develop a device capable of 19.2 Kbps.

Current 14.4-Kbps modems would require a chip swap to upgrade to V.32terbo. It is still unclear, however, whether another board swap or just a software upgrade would be needed to then move to V.FAST.

Multi-Tech Systems Inc. of Mounds View, Minn., expects to ship its MT1932BL modem capable of 19.2-Kbps data transmission near the end of the first quarter for \$1,199. The device will require Mac cables.

Zypcom Inc. of Hayward, Calif., last week announced a \$749 V.32terbo modem due to ship in May. Mac software will be included. □



Gateways

BRIEF S

Ericsson cuts price of wireless modem

Paramus, N.J. — Ericsson GE Mobile Communications Inc. last month slashed the price of its wireless modem.

Ericsson's Mobidem now costs \$775, a 44 percent cut from \$1,395. Despite Ericsson's move, competitor Motorola Inc. said it has no plans to adjust the price of its \$1,350 two-way wireless modem, the InfoTac.

Roaming Mac users will not be able to take advantage of the less-expensive Mobidem until later this spring when RadioMail Corp. of Menlo Park, Calif., and Performance Systems Inc. of Reston, Va., separately introduce Mac software to connect wireless modems to Ardis Co.'s Ardis or RAM Mobile Data Inc.'s wireless networks.

Ericsson GE Mobile Communications Inc. is at 15 E. Midland Ave., Paramus, N.J. 07652. Phone (201) 265-6600; fax (201) 265-9115.

PATHtracker monitors, evaluates Pathworks

Waltham, Mass. — Distributed Technologies Corp. last week shipped a network-management package to help administrators monitor Macs and other computers that reside on Digital Equipment Corp.'s Pathworks network operating system.

PATHtracker is a line of products that evaluate Pathworks servers, as well as Mac, OS/2 and DOS clients. The \$99 client package periodically provides reports on hardware and software configuration, as well as the amount of time a program is resident in memory.

PATHtracker Server, priced at \$495, provides information on how many connections are made to the Pathworks server and which clients are using the server. PATHtracker-Mac is available in a 10-user pack for \$595 and a 100-user pack for \$3,995.

Distributed Technologies Corp. is at 275 Wyman St., Waltham, Mass. 02154. Phone (617) 684-0060; fax (617) 684-0072.

Cayman offers new 24-hour support plan

Cambridge, Mass. — Cayman Systems Inc. last week announced a new 24-hour support plan and enhancements to its software maintenance program.

Under Cayman's "7 by 24" Support Plan, customers gain access to the company's technical support staff around the clock, seven days a week. After-hours calls will be directed to staffers with beepers. Pricing is based on the size of a customer's network and number of Cayman products.

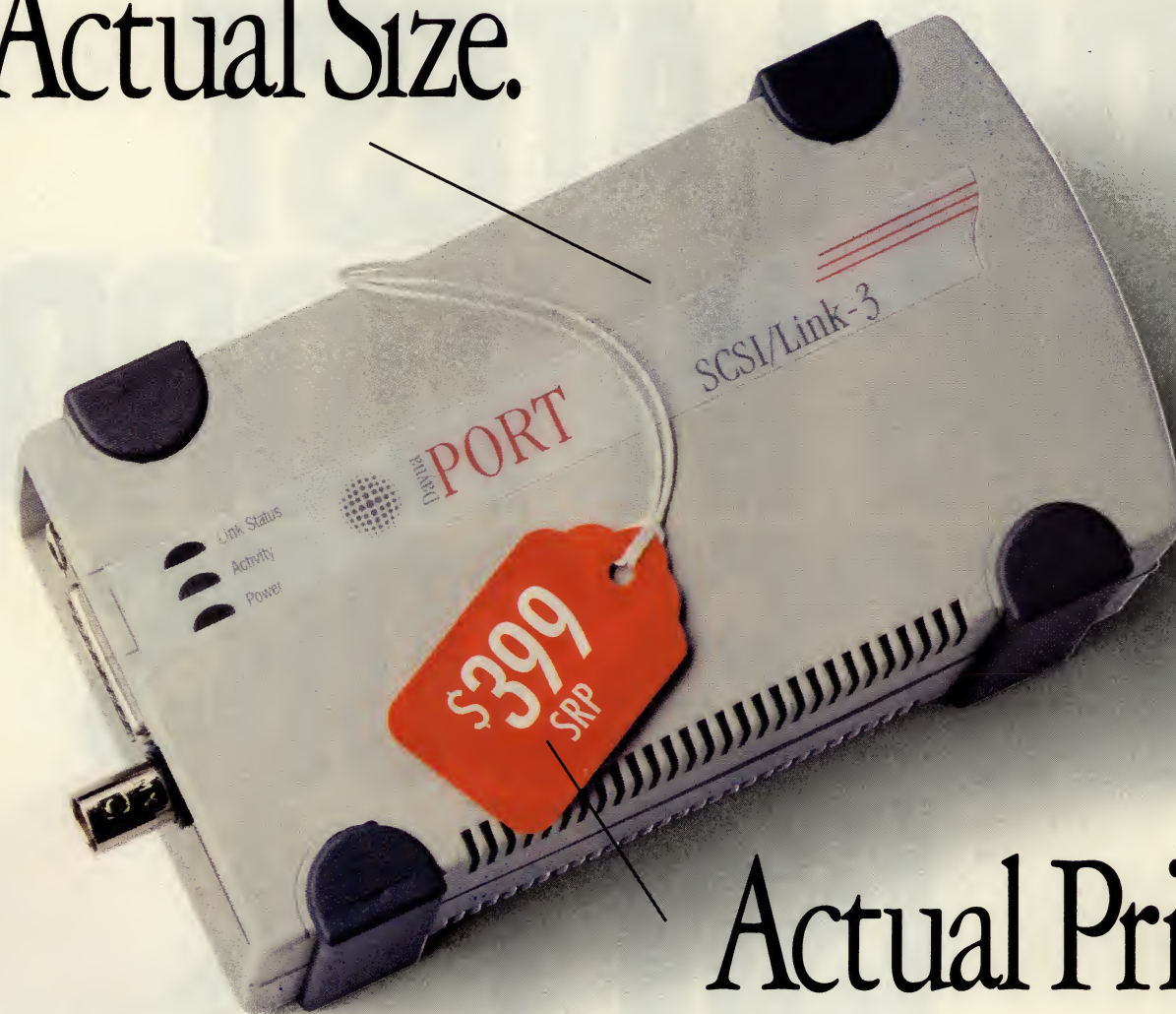
Cayman enhanced its GatorCare maintenance plan: Customers now get priority assistance from technical staff, and replacement hardware will be sent overnight in the event of a unit failure.

Cayman Systems Inc. is at University Park at MIT, 26 Landsdowne St., Cambridge, Mass. 02139. Phone (617) 494-1999; fax (617) 494-1124.

"The smallest, lightest SCSI Ethernet interface available for the Mac."

— MacUser, February 1993

Actual Size.



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The editors of *MacUser* magazine said it best. DaynaPORT SCSI/Link is the smallest, lightest SCSI Ethernet adapter on the market today.

Macintosh SCSI Ethernet Adapter Comparison	DaynaPORT SCSI/Link	Asanté EN/SC	Focus EtherLAN SC
Dimensions	6" x 3" x 1.75"	8" x 4" x 1.5"	7.5" x 5.5" x 1.5"
Weight	13 oz.	24 oz.	25 oz.
Pass through SCSI	Yes	Yes	No
SCSI termination switch	Yes	No	No
3-in-1 models available	Yes	Yes	No
Autosensing Ethernet ports	Yes	No	No
Onboard SCSI controller	Yes	No	Yes
100% Apple SCSI compatible†	Yes	No	No
SCSI cable included	Yes	Yes	No
Warranty	Lifetime	5 years	5 years

†Only SCSI/Link fully implements the IEEE SCSI specifications without modifying the Apple SCSI Manager.

But don't just try us for our size. Compare us feature for feature with our competition and you'll see that we've packed a whole lot of value into a very small product. SCSI/Link includes two SCSI ports and a handy termination switch, so it's easy to connect anywhere in your SCSI chain. And unlike our competitors, we designed our product to be fully compatible with Apple's SCSI Manager, for maximum reliability and compatibility with all Macintosh models.

Add to that our reputation for quality engineering design and manufacturing, our superb technical support and our no-nonsense lifetime warranty, and

you simply won't find a better, safer buy from anyone else in the industry.

MacWEEK Macintosh Volume Buyers (MVBs) take note. You can try SCSI/Link FREE OF CHARGE for 30 days. Just call us today at 1-800-44DAYNA and ask about our *MacWEEK* MVB evaluation program.



Dayna

Macintosh Networking Specialists

* Actually, actual prices (street prices) for all our products are typically about 25% to 30% less than retail. Check with your favorite reseller for current prices.

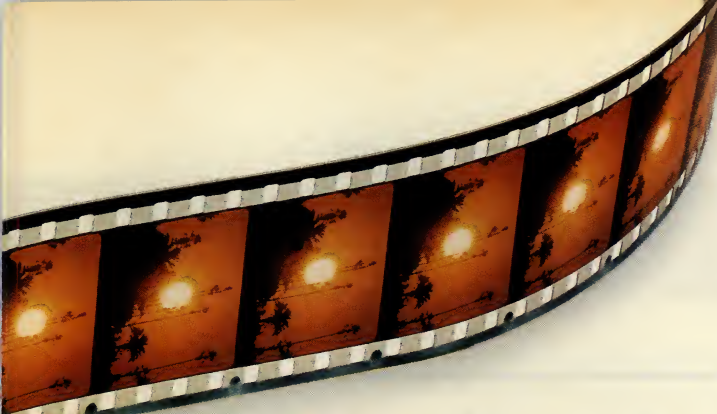
DaynaPORT SCSI/Link is a trademark of Dayna Communications, Inc. All other product names are the trademarks of their respective holders. © 1993 Dayna Communications, Inc., 50 South Main, 5th Floor, Salt Lake City, Utah 84144. (801) 531-0600 FAX: (801) 359-9135.



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PLANNED GROWTH

To Matthew Long, it just didn't make sense.

His beloved hometown of Ellie, Maine, has had a severe housing shortage ever since the big pizza-sauce factory opened in nearby Bukovina.

Workers—who have done much to spur the local economy—are doubling, even tripling up in small apartments. Some are even sleeping in cars.

Mr Long, who happens to be a contractor, wants to help by building



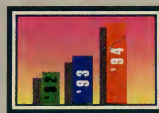
any more strangers than the ones we have now."

Mr Long sees it differently. "I think it's pretty cheesy. Everyone was a stranger here at one time or another.

affordable new homes for these workers. Unfortunately, that's the last thing the Ellie Zoning Board wants to happen.

Ellie, they say, has enough houses. "We have to control our growth," says Barney Hotchkiss, longtime resident and curmudgeon. "We don't need

While the current recession has generally eased much of this country's growth problems, in any areas it has not abated at all. In Las Vegas, population increases



LAS VEGAS—Ever since gambling came to this desert town, people have, too. Between 1970 and

1970, its population almost doubled. By 1990, over a quarter-million people were calling it home.

If trends continue, say experts, Las Vegas will have a serious crisis on its hands.

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NewTek gives Macs Toaster hookup

ToasterLink connects Macs to video device

By Neil McManus

Topeka, Kan. — NewTek Inc. this week will deliver a kit that lets Mac users cook up video productions on its Video Toaster.

ToasterLink for the Macintosh, priced at \$595, connects the Mac to NewTek's video-production and special-effects system through a SCSI interface. Users can control the Toaster and transfer Mac images to the device through an included Mac switcher program.

NewTek's Video Toaster Workstation, which starts at about \$4,000, includes a Commodore Amiga packed with 5 Mbytes of RAM, a 52-Mbyte hard drive, and several graphics and video-production programs.



ToasterLink for the Macintosh comes with a Mac application that lets users control the Video Toaster's switcher and transfer images to the device.

NewTek said ToasterLink and the Toaster will give Mac users a variety of high-end tools, such as:

► **A switcher**, which lets users perform cuts, fades and wipes between any of seven possible sources. Users can mix video images and key them over backgrounds.

► **Digital video effects**, processed through four custom VLSI (very large-scale integration) chips, including flip, spin, tumble, page peel, warp, and digital and analog trails.

► **LightWave 3D**, a 24-bit program for modeling, rendering and animating 3-D graphics.

► **ToasterPaint**, a painting program optimized for broadcast video graphics.

► **ToasterCG**, a character generator that takes advantage of the Toaster's dual-frame buffers and linear keyer to produce anti-aliased titles.

► **ChromaFX**, a color processor for creating effects such as sepia toning, solarization and posterization.

► **A frame grabber**, which lets users capture video images for manipulation.

The Toaster can directly read Mac files in PICT, DXF (Drawing Interchange File) and Macromedia Inc.'s Swivel 3D formats. ToasterLink for the Macintosh reportedly will be upgraded to let users capture Toaster productions as QuickTime movies.

NewTek Inc. is at 215 S.E. Eighth St., Topeka, Kan. 66603. Phone (913) 231-0100 or (800) 847-6111; fax (913) 231-0101. □

Abbate system queues up QuickTime

By Neil McManus

Millis, Mass. — Abbate Video Inc. this month will upgrade its video logging and editing system with QuickTime support and an infrared device for controlling VCRs and camcorders.

VideoToolkit 2.0 will cost between \$279 and \$299, depending on which video decks the user owns. Like the previous version, the update will let Mac users catalog and edit videotape.

New features of 2.0 will include:

► **QuickTime support**. The update will be able to embed timecode data into the starting frame of a QuickTime movie, allowing users to edit sequences in programs such as Adobe Premiere before assembling finished tapes in VideoToolkit.

► **Infrared control**. VideoToolkit 2.0 will come with a serial device that connects to the Mac through a serial cable and sends infrared control sig-

See Abbate, Page 28



Abbate Video's VideoToolkit 2.0 embeds timecode data into the starting frame of a QuickTime movie. Users can record and play movies as they log sequences.

Expert Draw offers a palette of 24-bit-color tools at low price

By Kirsten L. Parkinson

Coral Gables, Fla. — Expert Software Inc. last week shipped a 24-bit-color drawing program aimed at budget-conscious users.

Expert Draw, priced at \$49.95, includes standard drawing tools for creating lines, circles and polygons, as well as manipulation tools that rotate, scale, stretch and group objects.

Other features include:

► **Text tools**. To create complex text paths, users can bind text to the inside or outside edge of any object, then hide the object from view.

► **Libraries**. Expert Draw features object libraries where users can store images. It also ships with clip-art libraries covering topics such as animals and holidays.

► **Blends and gradient fills**. Users can blend colors, patterns and line attributes between objects as well as create gradient fills within an object.

► **Multiple file formats**. Expert Draw handles PICT, PICT2, Encapsulated PostScript and Paint

files. The program also can import and play QuickTime movies.

"Expert Draw is an excellent product for the price," said Steve Krischer, education chairman for the Miami-based Gold Coast Macintosh Users Group and an Expert Draw beta tester. "It's probably as easy to use as MacDraw or MacPaint used to be, but it's got a lot more features."

"The libraries are pretty neat because if you're doing things that tend to be repetitive, you've got places where you can stash and retrieve [images]," Krischer said.

Expert Draw supports publish and subscribe under System 7, and the program is compatible with all QuickDraw printers, the company said. It will compete against other low-cost drawing programs, such as Deneba Software's \$149 artWORKS (see MacWEEK, Nov. 23, 1992).

Expert Software Inc. is at 800 Douglas Road, Suite 355, Coral Gables, Fla. 33134. Phone (305) 567-9990 or (800) 759-2562; fax (305) 443-0786. □

Expert Draw from Expert Software includes text-manipulation tools that let users bind text to curves and other shapes.



Fiery Print Calibrator targets color photocopyers

By Matthew Rothenberg

San Mateo, Calif. — Electronics for Imaging Inc. last month released a software package that helps Mac users tune up output from color photocopyers.

The \$895 Fiery Print Calibrator works with the company's Fiery line of Adobe PostScript hardware RIPs (raster image processors), which turn copiers into 400-by-400-dpi color laser printers.

The new calibrator package supports the \$23,500 CLC 300 and \$49,000 CLC 500 from Canon U.S.A. Inc. of Lake Success, N.Y., as well as the \$25,000 ColorEdge 1525 and \$50,000 ColorEdge 1550 from Eastman Kodak Co. of Rochester, N.Y.

The Fiery Print Calibrator is based on the company's EfiColor Color Management System, which also is included in EFI's \$595

Cachet color-editing software.

The Fiery Print Calibrator compares a copier's CMYK (cyan, magenta, yellow, black) output with the correct maximum-density levels of each toner. Although designed to work with a Status T densitometer connected to the Macintosh, the package also works with preset default measurements.

The program alerts users when
See EFI, Page 28

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On The Air launches support for QuickTime in presentations

By Carolyn Said

Hatboro, Pa. — Meyer Software recently pumped up On The Air with a new version that adds QuickTime support to the animation and presentation program.

On The Air 1.1, available now, lets users create presentations that incorporate path-based animations, still images and sound. The upgrade

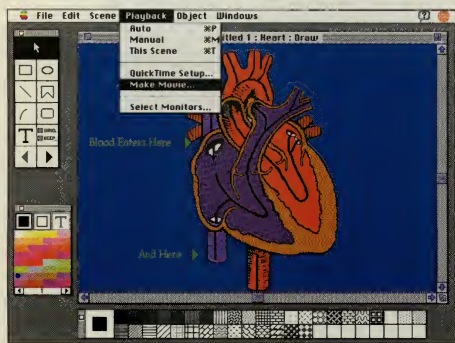
can save presentations as QuickTime movies or import and play QuickTime sequences.

The program features slider-bar controls that let users adjust animation speed and duration, rotate images, and apply transitional effects.

On The Air comes with On The Road, a playback-only application that lets presenters jump to any scene in a presentation or repeat any series of scenes in response to audience queries.

On The Air 1.1 is priced at \$225, a \$50 increase from the previous version. Registered users can upgrade for \$25.

Meyer Software is at 616 Continental Road, Hatboro, Pa. 19040. Phone (215) 675-3890 or (800) 643-2286; fax (215) 675-3873. □



Meyer Software's On The Air 1.1 now can import, create and play back QuickTime movies.

EFI

From Page 26

toner densities drift from the target values, and it can compensate for toner values as much as 20 percent below normal. It also provides visual reports of variations from optimum levels.

The \$34,999 Fiery is based on a MIPS R3000 RISC processor. The device can rasterize continuous-tone or halftone PostScript, TIFF or Encapsulated PostScript files in 24-bit color, and it outputs tabloid-size pages at a resolution of 1,600 by 400 dpi.

Fiery ships with 39 Type 1 fonts, 64 Mbytes of RAM, a 40-Mbyte hard disk, and EtherTalk and LocalTalk interfaces.

The \$20,000 Fiery Lite uses the same RISC chip as the Fiery, but it is limited to halftone images at a maximum resolution of 400 by 400 dpi. It includes 16 Mbytes of RAM. Fiery Lite owners will be able to upgrade to the complete Fiery for \$17,500.

Electronics for Imaging Inc. is at 2855 Campus Drive, San Mateo, Calif. 94403. Phone (415) 286-8600; fax (415) 286-8686. □

Abbate

From Page 26

nals to a variety of consumer VCRs and camcorders from companies such as JVC Corp., Zenith Electronics Corp. and Sony Corp. The program uses Control-L, PC-VCR, VISCA (Video System Control Architecture), and Control-M or RS-422 protocols to control source decks directly via a serial cable.

► **Increased speed.** While its predecessor required HyperCard, the program will now run as a stand-alone stack, so marking in and out points and controlling decks is faster.

► **Expanded hardware support.** The new version will work with all QuickTime-compatible video-digitizer boards to display source video on screen, grab snapshots of in and out points for logs, and capture QuickTime movies. Earlier versions supported only

cards from RasterOps Corp. of Santa Clara, Calif.

A new step-and-grab mode will let users capture full-screen movies one frame at a time. The program then can capture audio of the sequence automatically.

William Roberts, president of Media-Pedia Video Clips of Wellesley, Mass., and a Video-Toolkit 2.0 beta tester, used the step-and-grab mode to capture full-motion QuickTime movies. "The quality of the movies was excellent," he said. "[VideoToolkit] is an affordable way to capture full-screen, full-motion movies without buying video-compression boards."

Upgrades are \$6 for users who purchased the program after Oct. 1, 1992, and \$59 for other registered VideoToolkit users.

Abbate Video Inc. is at 14 Ross Ave., Millis, Mass. 02054. Phone (508) 376-3712; fax (508) 376-3714. □

Lapis readying video encoders for LC, Mac IIs

By Nathalie Welch

Alameda, Calif. — Lapis Technologies Inc. next month will ship versions of its L-TV video-encoder card that support both composite and S-video devices.

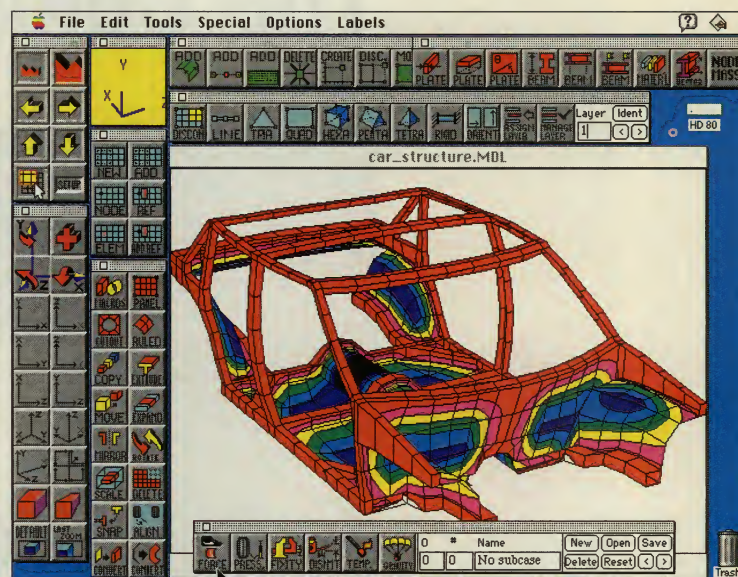
Like the current \$349 interface card, which supports NTSC video signals and plugs into the processor direct slot of Mac LC models and the Performa 400, the new L-TV Pro series will let Mac users display output on a television set, video monitor or VCR.

The new cards include two NuBus versions that are compatible with the Mac II series and Quadras as well as the Performa 600. The NuBus boards, to be priced at less than \$600, will include models compatible with NTSC or PAL (European) video signals.

The L-TV Pro series also will include two cards that provide S-video support for LC-series Macintoshes and the Performa 400. They will cost less than \$450 for either an NTSC or PAL version, according to Lapis. Both reportedly will be compatible with the Color Classic and Macintosh LC III, due this week.

Lapis next month also will ship a new PDS version of its L-TV card that will support PAL signals on composite devices. The PDS card also will cost less than \$450.

Lapis Technologies Inc. is at 1100 Marina Village Parkway, Suite 100, Alameda, Calif. 94501. Phone (510) 748-1600; fax (510) 748-1645. □



LapCAD 3-D 5.0's modeler has a new palette (lower right) that allows users to apply an unlimited number of hypothetical stresses to an object design.

LapCAD 5.0 adds multiple layers

Controls let users sketch, model objects

By April Streeter

San Diego — LapCAD Engineering next month will offer an upgrade to its 3-D modeler that will let users create multiple object layers and visualize stresses applied to objects.

LapCAD 5.0, priced at \$1,120 for a 20-user pack, will feature controls that allow users to sketch and model 3-D objects that contain up to 15,000 modifiable layers.

"We could never have built the models we are working on without the separate layers," said Stan Purington, mechanical engineer at the Naval Ocean Systems Center here. "It would have taken 10 times

longer and been impractical [to attempt]. The upgrade is a quantum leap forward."

Version 5.0 also will include an icon palette that lets users apply stresses to an object. For example, an automobile design could be modified to reflect the effects of varying intensities of wind or test the weight the vehicle could bear.

Users will be able to graphically view the mathematical equations the application uses when applying stress loads to an object in LapCAD, or export them to an application-solver program for stress and vibration analyses. LapCAD imports and exports ASCII and DXF (Drawing Interchange File) formats.

LapCAD Engineering is at 7710 Balboa Ave., Suite 229, San Diego, Calif. 92111. Phone and fax (619) 467-1947. □

Mark of the Unicorn tunes up Performer to print scores

Also set to release new MIDI interface

By Kirsten L. Parkinson

Cambridge, Mass. — Mark of the Unicorn Inc. last month shipped Performer 4.1, an upgrade to the MIDI sequencing program that adds the capability to print musical scores.

The company this month also will upgrade Digital Performer and release a low-end MIDI (Musical Instrument Digital Interface) interface for the Mac.

► **Performer 4.1** is a \$395 sequencing program that lets users compose, mix and edit MIDI tracks. The upgrade lets users print individual tracks or entire scores in

notation form directly from Performer. Users also can print scores with titles, headers, footers, and measure and page numbers.

Version 4.1 also adds support for Unisyn, the company's \$395 editor and librarian program.

A new solo button lets users edit a single track in a piece while partially or completely muting the others.

To speed navigation among tracks, the new version also includes pop-up menus in the title bars of editing windows. Activity meters show which tracks are being played back.

Upgrades are free.

► **Digital Performer 1.3**, which allows users to compose and edit both digital audio and MIDI tracks, will incorporate all the enhancements of Performer 4.1. It also will

add support for Yamaha Corp. of America's CBX-D5 hard disk recorder, allowing users to digitize audio from within the program. Digital Performer users will be able to edit the digitized sounds and integrate them with MIDI tracks.

Digital Performer 1.3 will list for \$895. Upgrades will be free.

► **MIDI Express** is a \$349 MIDI hardware interface for the Mac. The serial device will offer four input and six output ports that support 64 and 96 MIDI channels, respectively. The MIDI Express also will include a SMPTE synchronizer that syncs MIDI performances to analog audio automatically.

Mark of the Unicorn Inc. is at 1280 Massachusetts Ave., Cambridge, Mass. 02138. Phone (617) 576-2760; fax (617) 576-3609. □

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Chris Gulker, Director of Development at the Examiner, explains.



IT'S BEEN QUITE A DECADE. THE EXAMINER CAPTURED IT ALL IN RADIUS 24-BIT COLOR.

breakthrough for us in terms of hitting really tight deadlines. Rather than going through the whole

Giants leaving SF.

It is also a factor that may give local sports fans a sense of déjà vu. The San Francisco Giants, who have been in the city for 100 years, are leaving for the Pacific Coast. The team's departure is a major blow to the city's sports scene.

7:30 AM

City fights to keep ball team.

The city is fighting to keep the Giants in San Francisco. The team's departure is a major blow to the city's sports scene.

11:30 AM

Giants going, going gone.

The city is fighting to keep the Giants in San Francisco. The team's departure is a major blow to the city's sports scene.

1:30 PM

Giants stay home.

The city is fighting to keep the Giants in San Francisco. The team's departure is a major blow to the city's sports scene.

2:30 PM

They're out of here.

The city is fighting to keep the Giants in San Francisco. The team's departure is a major blow to the city's sports scene.

3:30 PM

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rigamarole of waiting for proofs then making all the necessary adjustments, we now have complete confidence that what we see on the monitor really

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On any given day, you can see six Rocket-equipped Mac IIci's and cx's with large Radius displays working fast and furious. And, of course, each one comes loaded with Radius 24-bit color.

Satisfied though they may be, the Examiner sees



A recreation of the San Francisco Examiner's "Hellfire" coverage.

shing system ry it's making two hours.



better days ahead. "We're hoping to get set up with RocketShare as soon as possible. That way, while

"OUR PHOTOGRAPHERS GET
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COMPUTER. IN ABOUT HALF THE TIME."

we're waiting for color to separate in the background, we can work on layout and photo editing on the screen. It's going to make life a lot easier."

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Tech Analysis

ColorSync framework helps solidify color management

Color-management systems have arrived, but many color-management issues are still fuzzy.

By Bruce Fraser

The 80/20 rule seems to apply to color management. The ColorSync extension, Apple's system-level color-management architecture, with help from Electronics for Imaging Inc. of San Bruno, Calif., Eastman Kodak Co. of Rochester, N.Y., and KEPS Inc. of Billerica, Mass., very quickly can get us 80 percent of the way toward good, predictable color. The last 20 percent may be more difficult, however, whether you're generating everyday business communications on a low-cost color printer or doing desktop pre-press.

The current crop of color-management systems (CMSes) — Apple's ColorSync (it is both the architecture and a stand-alone system), Kodak's ColorSense, EFI's EfiColor and KEPS' Precision Color Matching System — are all conceptually similar. However, while any can plug into the ColorSync architecture, it isn't possible to mix and match systems, application support is as yet very limited, and there's no easy way to transfer accurate color information from one system to another.

How will you choose? Initially at least, your choice of which CMS to use may be dictated by the level of third-party hardware support each enjoys. We expect virtually all color peripheral vendors to include ColorSync support in their future scanners, monitors and printers.

EFI has been aggressive in evangelizing printer vendors to include EfiColor support, with SuperMac Technology Inc. of Sunnyvale,

Calif., and Tektronix Inc. of Wilsonville, Ore., already on board, but the field is still wide open — RasterOps Corp. of Santa Clara, Calif., and Radius Inc. of San Jose, Calif., both license subsets of KEPS.

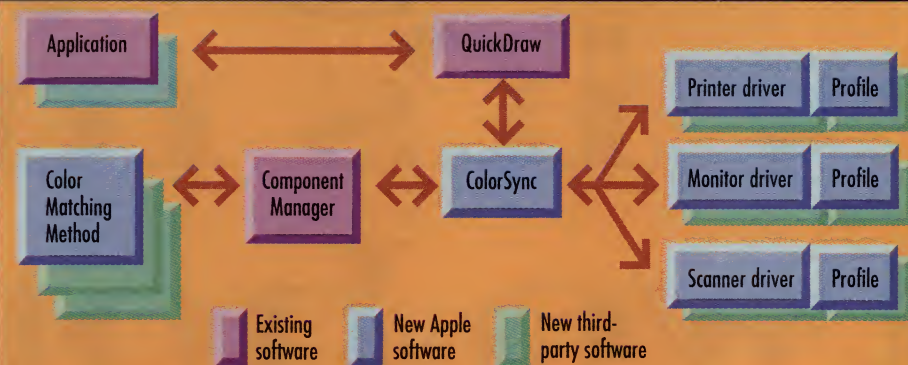
The premise of it all. The idea behind color-management systems is simple. Different devices produce different colors when given the same RGB (red, green, blue) or CMYK (cyan, magenta, yellow, black) color specifications: Monitor vendors use different phosphors, scanner vendors different lamps and filters, color printers different pigments. And, printing on the press is subject to a host of variables.

To make color consistent, we have to perform some kind of color conversion when we go from device to device. To do so, we need to know the characteristics of the device, be it a monitor, scanner, printer or imagesetter.

All the color-management systems accomplish these ends similarly, using three components: a device-independent color space, a set of device profiles and a color-matching engine that does the transformations between color spaces.

What's a color space? The underlying device-independent color space is based on the way humans see color. It differs from the process of listing the component values that make a given device produce color — which is what color models such as RGB and CMYK do. Most of the color-management systems use the CIE

How ColorSync fits in the color-management jigsaw



Apple's ColorSync architecture allows vendors to plug their own color-management systems into the system, where they can be transparently called by applications. The Color Matching Method reads the device profiles for input and output devices, adjusting the color as necessary to maintain consistency among monitor, scanner and printer.

Source: Apple

XYZ color space, one of a series of international standards of color spaces developed in the 1930s by the Commission Internationale de l'Eclairage.

The device profiles record the color-rendering characteristics of individual devices, so that the system knows exactly what RGB values to send to a given monitor or printer to produce a specific

color, as defined in the underlying color model.

The color-matching engine handles the transformations between device-specific RGB or CMYK values and the device-independent CIE color values.

The importance of profiles. Obviously, a great deal depends on the accuracy of both the device

News Analysis

Mainstream software applications: Are

KEPS, EFI products are vying for the same territory in the color publishing market.

By Darcy DiNucci

Aldus Corp.'s recent announcement that it would be bundling KEPS Inc.'s Precision Color Management System with PageMaker 5.0 and PhotoStyler by the middle of this year gave notice to the color-publishing market that KEPS and Electronics for Imaging Inc. would be vying for the same territory. In its booth at January's Macworld Expo in San Francisco, Quark Inc. of Denver was demonstrating San Bruno, Calif.-based EFI's EfiColor Extension for QuarkXPress. It will be bundled, along with EfiColor and 16 device profiles, with XPress 3.2 when it ships late this spring.

"As a result of us choosing Kodak (Billerica, Mass.-based KEPS is an Eastman Kodak Co. company), EFI is not going to have a monopoly on the market, and there will be multiple vendors to choose from," said Dave Roberts, director of publishing products at Aldus, based in Seattle.

The KEPS/Aldus alliance puts KEPS, formerly associated primarily with commercial trade shops, firmly into the desktop color market. And although Quark and Aldus have announced that they will support other color-management systems

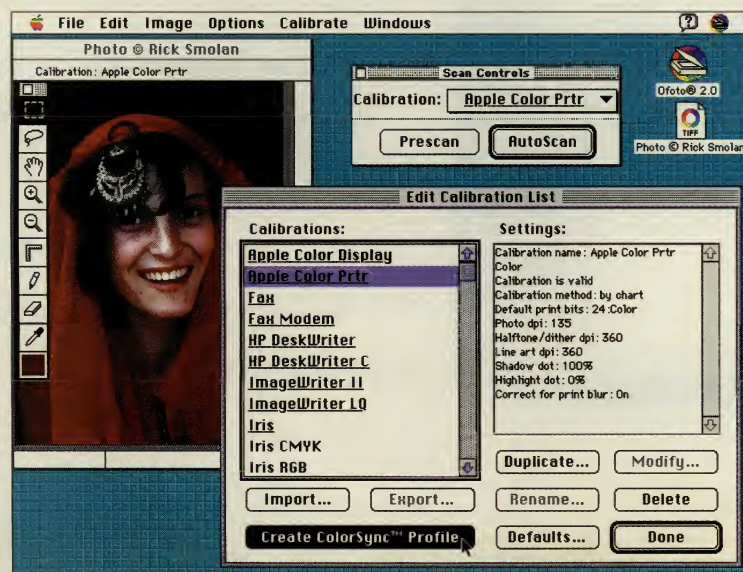
(CMSes) as well, both opted to focus their energies on one CMS at a time.

User allegiances already may be formed by the time more options are available, so these early alignments may mean that the color-management field will be split down the familiar XPress/PageMaker lines. As Grady Yarborough, product manager for the ColorScript printer from QMS Inc. of Mobile, Ala., said, "I can't see how anybody's going to win [over a customer] if their application is already bundling the other system and it works."

De facto decisions. On the face of it, Aldus' decision to bundle the KEPS system and Quark's decision to bundle EFI doesn't mean that users of either program are limited to that application's chosen standard. Since EfiColor and the KEPS system are both ColorSync-compliant, any application should be able to call on either of them, depending on which is loaded in the system via a particular application.

While that is true for the basic functions available in ColorSync, it doesn't work for extended functions that require direct application support for each CMS. "You could use the other color-management systems

When Ofoto printer/scanner calibrations are saved as ColorSync profiles, color images look better on screen. Ofoto uses "closed-loop calibration," a process in which the target is scanned, printed, then scanned again to take into account the paper being used.



profiles and of the transformations. The ColorSync CMS and ColorSense profiles are relatively simple: They record the black point, white point, and saturated primary and secondary colors (red, green, blue, magenta, cyan and yellow). The color-matching engine then interpolates the intermediate values. This method is too crude for pre-press, although it may be sufficient for everyday use, perhaps when

printing Excel charts in color for an in-house report.

Apple's ColorSync is important primarily as an architecture.

Where systems fit in. Apple's ColorSync is important

primarily as an architecture: The ColorSync CMS itself is offered as a default, but Apple clearly expects third parties to offer systems that are faster, more accurate, or both.

Kodak's ColorSense, aimed at the lower end, is a \$499 end-user package that includes a monitor calibrator and device profiles for a wide range of input and output devices, and as such is aimed at the everyday office-communications market.

It's perhaps significant that the

flagship software package rolled out with ColorSync, Ofoto 2.0 from Light Source Inc. of Larkspur, Calif., uses its own CMS rather than Apple's.

EfiColor and KEPS profiles, in contrast, measure several hundred points in the device's gamut, so they have large look-up tables on which to base interpolation of the intermediate values. EfiColor and KEPS will be bundled with higher-end hardware and software products rather than sold as end-user packages. Both companies have pre-press backgrounds, and both clearly aspire to bridge the gap between everyday communications and the pre-press industry.

The question of gamuts. A third factor that impinges on the efficacy of color matching is the problem of unequal color gamuts. A device's color gamut is the total range of colors it can reproduce. A color monitor is capable of displaying many more colors than even the best print job can reproduce, and different printing technologies have different color gamuts. Newsprint has a much smaller gamut than glossy magazine stock at a high line screen.

Hence the need for gamut mapping, reducing the larger gamut of the scanner or monitor to fit the smaller gamut of print.

Types of gamut matching.

There are three basic methods of gamut mapping: perceptual matching, colorimetric matching and saturation matching. Perceptual matching preserves the relative perceptual difference between colors while compressing the entire gamut. This is usually the method of choice for scanned images.

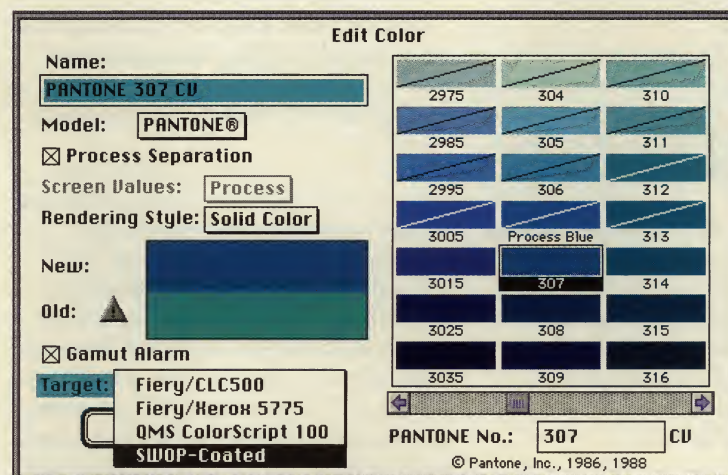
Colorimetric matching affects only those colors that fall outside

the target device's gamut. These are changed to bring them within the gamut, while the remaining colors are unchanged. It often reduces the total number of colors present, and is best-suited to spot color.

Saturation matching maintains relative saturation levels at the expense of contrast and is designed to offer good results on photo-realistic images from 3-D rendering applications.

The ColorSync architecture allows all three color-matching methods, but the user interface for choosing the method to use on a

See ColorSync, next page



QuarkXPress has adopted EfiColor as its CMS. Here we see the Edit Color dialog box with the EfiColor XTension loaded. It shows via slashes through patches which Pantone colors are out of gamut for the selected device. The user can select any profile loaded in the System folder.

they in sync with ColorSync?

with Quark, but your results wouldn't be as good," said Greg Morton, a spokesman at Quark.

Keeping development priorities straight. For KEPS to draw on such extended functions within XPress, either KEPS or Quark would need to develop a KEPS XTension, a time-consuming project not yet begun. Aldus' plans for incorporating color management weren't clear at press time, but Aldus representatives made it clear that KEPS support was the priority. The realities of product development time, then, mean that the announced relationships will be exclusive, at least initially.

Adam Stock, product marketing manager at EfiColor, said, "Eventually, both applications [PageMaker and Quark] will support both [EfiColor and KEPS]. In the short term, though, you're making a choice [of color-management systems] based on what application your using."

Playing the field. Although the backing of one color-management system or another is an implicit judgment call, no vendor, including Quark or Aldus, will sit tight in just one camp. Quark's Morton said,

"We feel that EFI is the industry standard for color," but added, "We may work out an agreement down the line with Kodak."

Dave Roberts, director of publishing products at Aldus, voiced a statement paraphrased by almost every color application vendor: "We want to work with color management the way we work with fonts: That is, we'll work with the system no matter who's there. We're not in the business of trying to force choices on users," Roberts explained. Aldus' choice pragmatically. "A lot of users just want us to supply them with a color-management system, and they don't care which one," he said. "That will be the role of the KEPS agreement."

Plug-ins allow versatility.

Other vendors of color applications and hardware are carefully refraining from throwing their weight behind any one option.

Adobe Systems Inc. of Mountain View, Calif., says: Let others do plug-ins.

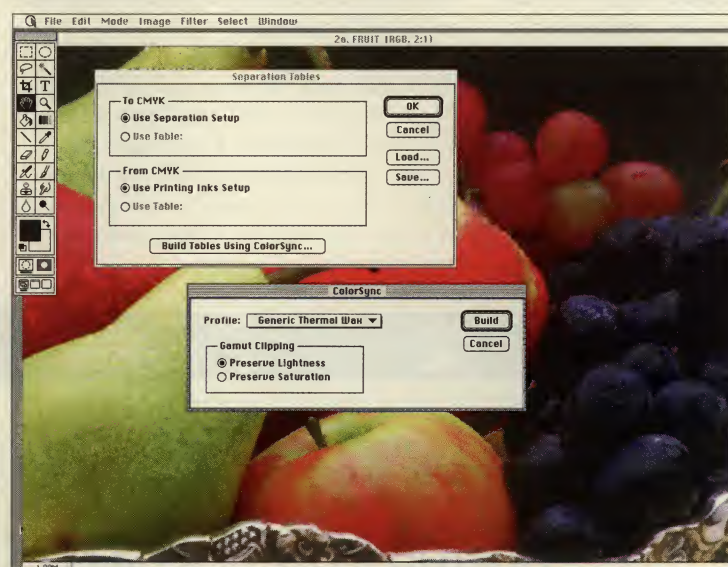
Adobe's only allegiance is to Apple's ColorSync. "We would rather keep the program open and let people plug into any color-management system they want,"

said Adobe Product Marketing Manager Steve Guttman. Photoshop Version 2.5, now in beta and shipping this spring, will be ColorSync-ready.

Photoshop users have long been able to view their images in either RGB (red, green blue) or CMYK (cyan, magenta, yellow, black) color spaces. With Version 2.5, users should be able to fine-tune that feature by plugging in device-specific profiles from ColorSync-compatible color systems.

The Monitor Setup and Separation Tables Setup dialog boxes provide interfaces for choosing the profiles, and several color-management vendors, notably KEPS and Kodak but at press time not EFI, are providing plug-ins that enable users to take advantage of that system's device profiles to preview printed output on screen.

Adobe Illustrator's product manager, Sean McKenna, indicates that similar support is on the way for his product. "We'll have a strong overlap between the two applications," he said. Although McKenna would



Photoshop 2.5 will be ColorSync-savvy, allowing users to plug in ColorSync profiles for managed on-screen viewing. Third-party CMS vendors also can provide plug-ins for their systems, which can be loaded through the Separation Tables dialog shown here.

not be more specific, reports are that Illustrator 5.0 will support Photoshop plug-ins so that users can preview output effects in the same way they can with Photoshop.

Meanwhile, Aldus FreeHand will hew to the Aldus party line. Ed Meadows, FreeHand program manager, indicated that FreeHand would support KEPS first, but he could not say just how or when the system would be incorporated.

Device profiles for all. The other key component of a CMS, the device profiles, seem abundant for the full range of color-management systems. "We'll work with all of them," said Chris Kryzan, director of product marketing at SuperMac Technology Inc. of Sunnyvale, Calif. SuperMac's ThunderSpeed

accelerator will be optimized for every CMS, its monitor calibrators will write device characterizations for each, and its printers and monitors will be supported by the full range of device profiles.

QMS' Yarborough echoes the sentiment. "We're supporting all color-management systems. We're not going to force our customer to make a decision." San Jose, Calif.-based Radius Inc.'s PrecisionColor Management System includes KEPS' color-management profiles, but its monitors are supported by EfiColor profiles plus KEPS and ColorSync.

Helping hardware vendors. Hardware vendors are getting a lot of help from the color
See Applications, next page

Applications

From previous page

technology vendors to create the profiles that support the CMS. "It comes down to enabling your technology," said EFI's Stock. "As soon as Quark ships, really the only question users will have is, 'Do you have a profile for my printer?'" Thanks to the combined effort of hardware and color technology vendors, profile availability seems to be a non-issue. "No matter which color system you pick overall, you're going to have to have profiles for your devices," Aldus' Roberts said.

Long-term shakeout. While application allegiance will determine a user's color-management strategy for the short term, it seems that in the long term the choice will be the user's.

If that's true, how does one choose? The industry seems to agree that in terms of color matching methods, EFI and KEPS are pretty much on a par, so the quality of color matching probably won't be a reason to choose one system over another.

Although KEPS is now stressing its edge in commercial-printing expertise, EFI isn't being remiss in covering presswork and, in fact, is shipping two offset device profiles along with QuarkXPress. Kodak may have the edge in cross-platform applications, but so far, no color matching standard is set in the IBM PC and compatible world.

Cost may be a factor. There's no telling what market forces may do to prices once the market heats up, but at press time, EFI had announced that its device profiles would list from free (for monitors) to \$329 for some printers. KEPS' prices, on the other hand, range up to \$900 for the pre-press profiles.

The exact overall cost for a set of profiles is hard to calculate, because some may be bundled with hardware or software while others

are offered as an option by the hardware vendor, sold by the color technology vendor (EFI or KEPS), or distributed free on bulletin boards. At press time, no vendor was sure exactly how the market and distribution channels would break down.

In the long run, the issue may be moot. KEPS' Myron Kassara, director of marketing for advanced technology, thinks that peace may be wrought by a core system that can communicate between different color managers. "Say you have a system with Cachet with Efi-Color, and PageMaker with KEPS," Kassara said. "That's when you get into the need for standards for communicating between systems. ColorSync has given a base level for facilitating that, but for high quality you'll see vendors like ourselves trying to extend it."

Rich Buchanan, Radius product marketing manager, said he thinks that International Standards Organization standards under development will supersede the proprietary schemes in use now.

Rudy Burger, president of Savitar Inc. of San Francisco, which markets ScanMatch, a scanner-calibration system and color-matching method, thinks that in the long run, both high-end systems will disappear, their territory usurped by ColorSync itself. "Obviously, ColorSync is going to have to be extended to accommodate four-color transformations," Burger said, "and I expect that its interpolation scheme is going to get much more complex." (Savitar's ScanMatch is one of the few calibration systems that writes only in ColorSync format.)

Burger is original in using an analogy other than type: "The best parallel is QuickTime," he said. "After QuickTime came out, it reduced by an order of magnitude the number of third-party JPEG (Joint Photographic Experts Group) add-on products. And I think ColorSync will eventually do the same thing." □

ColorSync

From previous page

particular piece of artwork will be up to the applications. In addition to gamut mapping, applications also will be able to use ColorSync or a third-party CMS to offer gamut alarms, which indicate which colors lie outside the target device's gamut, and gamut simulation, where a device with a wide gamut such as a monitor is used to simulate the narrower gamut of a target printer.

Sounds good — is it? A host of details still needs to be resolved.

► First and foremost, there's no way currently to pass metric color information from one CMS to another. If you receive a scan made on a system using one CMS, there's no way to indicate to another CMS what the scanner's color space was.

EFI has proposed an open standard, Metric Color Tags (MCT) for PICT, TIFF and Encapsulated PostScript images, that could be read by any other CMS, but until the adoption of this or another such standard, different CMSes can't talk to one another.

► Next, there's the question of applications support. Matching between scanners and printers is taken care of by the respective drivers, but most low-end users just want WYSIWYG color — they want their output to match their monitor.

This is controlled by applications, which will have to be revised to provide display matching. Since ColorSync will be built into QuickDraw GX, Apple's new imaging model expected later this year, it's likely that applications will move to support display matching. However, a speed penalty is incurred by the necessary color transformations, so we'll probably see applications offering print-preview windows rather than simply matching color all the time.

► An often overlooked point at the low

end is that the accuracy of printer profiles depends critically on using specified paper. Light Source, in Ofoto 2.0, which is bundled with the Apple Color One-Scanner, gets around this by using closed-loop calibration. In this process, a color target is scanned, printed, then scanned again. This approach ensures that the paper being used is taken into account, but may not always be practical, particularly with remote printers. Calibration in general is likely to become more, not less important, as this technology takes hold.

► A serious limitation for high-end users is that ColorSync doesn't accept CMYK input. In fact, it's likely that whatever degree of acceptance CMSes enjoy from the pre-press industry will be driven by front-end demand from artists and designers, who almost certainly will adopt CMSes to obtain consistency between their monitors and color printers and will expect that consistency to hold all the way to the press.

► The integration with PostScript isn't yet seamless. In fact, until the Level 2 driver ships, integration with PostScript is non-existent because ColorSync expects the printer driver to take care of calling the device profile for the printer.

Once the Level 2 driver ships, there are two schools of thought as to where the color transformations should take place in a PostScript environment. According to Mountain View, Calif.-based Adobe Systems Inc., the transformations should take place in the printer: This can be accomplished either by using the color-rendering dictionary built into PostScript Level 2 devices, or by downloading a device profile in the form of a Level 2 color-rendering dictionary. EFI favors the latter approach — in fact, the color-rendering dictionaries in the new QMS thermal-wax printers are EfiColor profiles.

One great advantage. Rendering the color in the printer has one great advantage: It preserves the device-independent nature of the PostScript file. You need only create one file, which is then transportable through the entire production process. With the forthcoming generation of fax-equipped PostScript color printers, it could become even more important — if you want to fax a color newsletter to 500 different recipients, it's impractical to obtain a device profile for each recipient's PostScript-fax printer and render each one separately.

But rendering the color on the host computer may be appropriate in some situations, for speed, accuracy, or both. It's the only way to go when printing to Level 1 printers and imagesetters, or to non-PostScript devices. Some applications almost certainly will choose to write directly to the CMS of their choice rather than go through the ColorSync architecture. This raises the interesting specter of color being overcorrected as it passes through multiple applications, each writing directly to the CMS.

Work flows will have to adapt to keep the number of color-space transformations to a minimum: Even with hardware acceleration, transforms take time, and even the best can introduce a certain amount of error. Color imaging will hit the mainstream this year, but until some of these issues are resolved, it won't all be smooth sailing. □

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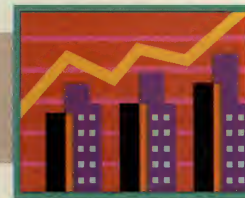
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BUSINESS WATCH

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► Market trends



Aldus profits drop to lowest ever

Executives continue to head for the exits

By Lisa Picarille

Seattle — The once high-flying Aldus Corp. has hit a new low.

Despite a 4 percent increase in 1992 revenues to \$174.1 million, Aldus' net income slid a 71 percent to just \$6.8 million — the company's lowest annual earnings since it went public in 1987 (see chart).

Aldus' fourth-quarter revenues for the period ended Dec. 31, 1992, rose 7 percent to \$45.7 million, chiefly because of strong demand for its Fetch image-retrieval database product. But net income plunged 58 percent to \$1.9 million, compared with \$4.5 million in the previous year's quarter — the company's sixth straight quarter of disappointing results.

Aldus officials attributed the profit decline to ballooning operating costs for sales and marketing programs and increased investments in research and development. The company also took a one-time charge of \$2.1 million for restructuring costs associated with the layoffs of 100 employees, or 11 percent of its worldwide workforce, and the acquisition of an Irish subsidiary last year (see MacWEEK, Aug. 17, 1992).

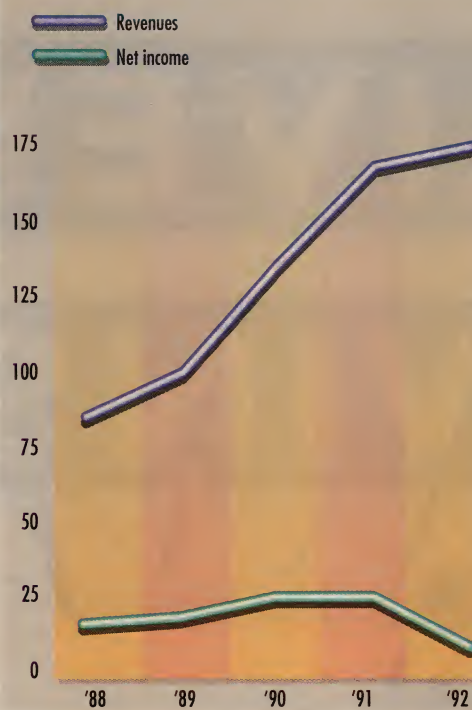
Underlying all that are threats to the company's flagship product.

Aldus Corp.



CEO: Paul Brainerd
Founded: 1984
Headquarters: Seattle
IPO: 1987
Employees: 1,000
Major Mac products: PageMaker, Fetch, FreeHand, Persuasion, IntelliDraw, SuperCard

Five-year summary (\$ in millions)



PageMaker, which brings in more than 50 percent of Aldus' revenues, faces strong competition from QuarkXPress at the high end and from word processors with publishing features at the low end, according to industry observers. Aldus still has about 65 percent of the desktop publishing market and is revamping its

channel strategy, the company said.

Meanwhile, sources said, Aldus may sell its consumer division — comprised primarily of products obtained through its 1990 acquisition of Silicon Beach Software Inc. — to generate cash.

The upheaval has hit the company's

See Aldus, Page 38

Network companies fare well

By Jon Swartz

San Francisco — Two networking companies, boosted by strong sales of Mac products, last week announced stellar results for the year.

► **Banyan Systems Inc.** posted an 183 percent increase in annual profits on slightly higher sales of \$113.5 million.

The Westboro, Mass., company said profits for its fiscal year ended Dec. 31, 1992, were \$8.3 million, compared with \$2.9 million a year ago. Sales were \$100.1 million last year.

Banyan's fourth-quarter profits jumped 76 percent to \$2.9 million. Sales increased 11 percent to \$30.6 million.

Banyan CEO David Mahoney said

last year's introduction of the company's first Mac product, Vines for the Macintosh, fueled software sales. Banyan's 1992 software sales increased 30 percent to \$75.5 million.

► **Compatible Systems Corp.** of Boulder, Colo., said its sales for fiscal 1992 grew 43 percent to about \$3 million, marking the company's fifth straight year of increased sales and profitability. The privately held company would not release its profit figures.

Compatible Systems attributed the improved results to brisk sales of its Mac routers and Ether*Write, a LocalTalk-to-Ethernet gateway that is licensed to Asanté Technologies Inc. Last week Compatible Systems released RISC*Router 3000E, an Ethernet router. □

Zenith is on again for fed contract

By Jon Swartz

Washington — Zenith Data Systems Inc.'s off-again, on-again, off-again bid for a hotly contested federal contract apparently is on again. And Apple, which made several pitches for the \$724 million contract, is out.

Just over a month after its contract to provide up to 300,000 personal computers to the U.S. Department of Defense was voided, Zenith was again awarded the lucrative deal last week, though this time it will have to share the business with a competing company.

The Air Force announced last week that the contract for Desktop

See Zenith, Page 38

Apple to decide how to break up higher-education sales division

By April Streeter

Cupertino, Calif. — Apple is busy trying to decide how to slim down its educational-sales force and divvy up pieces of the lucrative education sales pie.

Late last year, Apple announced that contracts with more than 400 of its higher-education resellers nationwide would not be renewed. Instead, the company said it will take higher-education sales direct. A company spokesman said the new program will differ for education entities that already have reseller organizations on campus from those that do not.

The plan will include a mail-order effort as well as a telemarketing program run by Apple's largest distributors, including Ingram Micro Inc., Merisel Inc. and Tech Data Corp.

"I'm not thrilled," said Sonny Cohen, owner of Alliance Computers in Chicago. Like other higher-education

resellers, Cohen's contract will end April 1. "Apple is making some very aggressive moves. They only have 22 percent of the higher-education market, though, so there are plenty of opportunities out there."

Apple also changed the program for its K-12 market and will announce contract awards to resellers this week. Under the new program, which Apple said will consist of about 50 resellers, sales agents will be assigned larger territories, have a new compensation program and be paid 2 percent of their annual sales as base salary.

Cohen, a previous K-12 reseller and an applicant for the new program, is taking a wait-and-see attitude about the plan. "It's just a new ballgame," he said, "and the people who thought contracts would always stay [the same] are the people now going out of business." □

StockWatch

02.03.93 CLOSE WEEKLY % CHANGE

Apple	60.00	-0.41
SOFTWARE DEVELOPERS		
Adobe	43.25	4.53
Aldus	16.63	16.67
Caere	23.00	10.84
CE Software	3.75	3.45
Microsoft	88.38	2.46
Novell	31.25	1.63
Symantec	12.00	3.23
PERIPHERALS VENDORS		
CMS	2.88	-4.17
HP	71.13	-0.70
Mass Micro	0.47	-24.96
QMS	15.63	0.00
Radius	5.25	2.44
RasterOps	8.63	9.52
Sigma	7.50	15.38
SuperMac	22.25	-1.11
STORAGE		
Conner	23.38	-0.53
Maxtor	10.63	2.41
Quantum	17.00	2.26
Seagate	19.38	6.90
SyQuest	19.75	-7.06
INDUSTRY INDICATORS		
DEC	43.75	4.48
IBM	51.25	3.27
Motorola	54.50	-5.01
Sun	37.75	-1.95
Dow Jones	3373.79	2.50

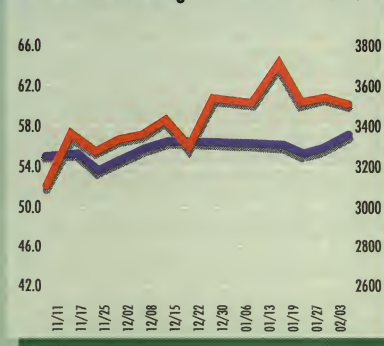
PERIPHERALS VENDORS		
CMS	2.88	-4.17
HP	71.13	-0.70
Mass Micro	0.47	-24.96
QMS	15.63	0.00
Radius	5.25	2.44
RasterOps	8.63	9.52
Sigma	7.50	15.38
SuperMac	22.25	-1.11
STORAGE		
Conner	23.38	-0.53
Maxtor	10.63	2.41
Quantum	17.00	2.26
Seagate	19.38	6.90
SyQuest	19.75	-7.06
INDUSTRY INDICATORS		
DEC	43.75	4.48
IBM	51.25	3.27
Motorola	54.50	-5.01
Sun	37.75	-1.95
Dow Jones	3373.79	2.50

Compiled by Norlby International Inc.

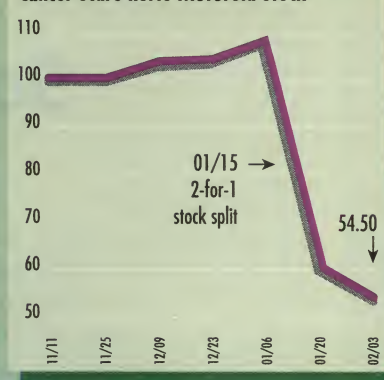
Stock prices of several major cellular-phone companies rebounded last week as investors brushed off fears that the industry might suffer long-term damage from a cancer scare.

Still, Motorola Inc., whose shares

Apple stock price 60.00 on 02/03/93
Dow Jones average 3373.79 on 02/03/93

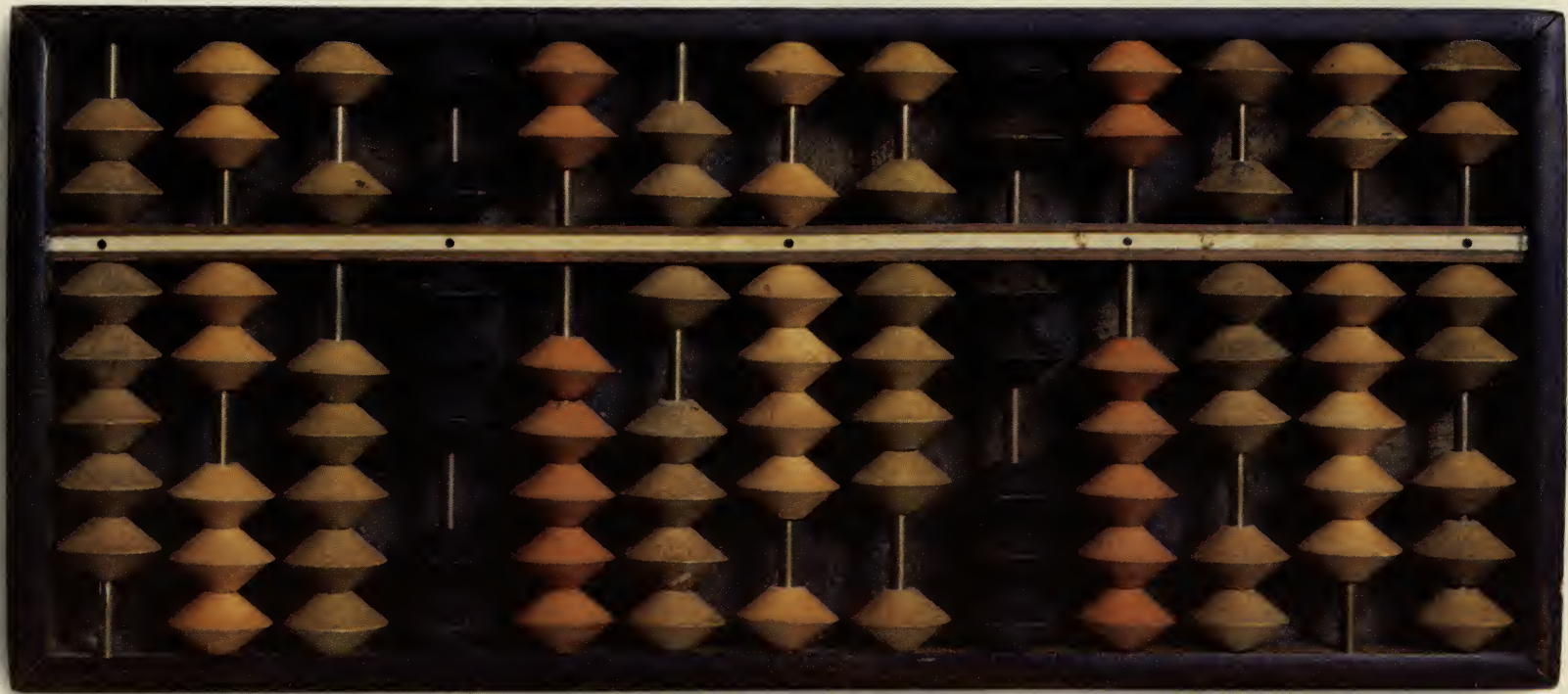


Cancer scare hurts Motorola stock



plummeted \$10.13, or 17 percent, shortly after the purported link between cellular phones and cancer was publicized, saw its stock decline 5 percent last week to close at \$54.50 per share.

It's been centuries since working with numbers was this easy.



The abacus first appeared around 500 or 600 B.C. Some say it was invented by the Egyptians. Others think it was the ancient Chinese. But whoever it was, they had the right idea: create a simple, easy-to-use device for working with numbers, and people will be a lot more productive.

Like the abacus, 1-2-3® for Macintosh® was inspired by simplicity, and the new Release 1.1 is even simpler to use. Now you can drag-and-drop data between worksheets. And with new SmartSum, you can simultaneously sum multiple ranges. And only 1-2-3 for Macintosh is fully compatible with other versions of 1-2-3. So you can work more efficiently and productively with the 18 million other 1-2-3 users across all major platforms.

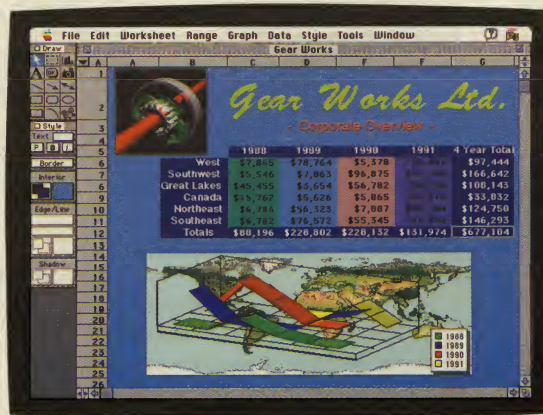
The easiest graphing of any Mac® spreadsheet.

The remarkable graphing and charting capabilities of 1-2-3 make it the best Macintosh spreadsheet for presenting data. Because unlike Microsoft® Excel, 1-2-3 lets you store your graphs and charts in the same file as your worksheets. So you can manipulate data, text and graphics

all in the same file with *one* set of menus and only *one* set of tools.

Now Release 1.1 takes these graphing capabilities even further.

Like the ability to paste pictures behind your graphs, stack pictures to form bar charts, and view your graph source data by scrolling up the bottom edge of your graph.



New graphing enhancements in Release 1.1 let you turn your numbers into graphic presentations faster and easier than ever.

True 3D makes organizing and analyzing data fast and easy.

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1-2-3 for Macintosh. All in all, it's the easiest way to work with numbers to come along in centuries. To find out for yourself, buy a copy from your Lotus Authorized Reseller,* and try it for 60 days with a full money-back guarantee direct from Lotus.® Or call **1-800-TRADEUP, ext. 8396**** for a free working model. (Excel users be sure to ask about our special upgrade price.***)

Lotus

1-2-3 for Macintosh

Drive makers' sales, profits rise

Quantum, Maxtor show biggest gains

By Jeff Ubois

San Francisco — Major drive manufacturers last month reported increased sales and profits for the quarter.

► **Quantum Corp.** reported record sales and profits for its third quarter ended Dec. 27, 1992. The

Milpitas, Calif., company said sales rose 60 percent to \$459 million, compared with \$287 million in the same quarter a year ago.

Profits, meanwhile, jumped 198 percent to \$28 million, from \$9.4 million a year ago.

► **Maxtor Corp.** of San Jose, Calif., reported third-quarter sales for the period ended Dec. 26, 1992, of \$402.6 million, up 59 percent from \$252.9 million last year.

Profits for the quarter skyrocket-

ed 400 percent to \$18.6 million, from \$4 million in the previous year's quarter.

► **Conner Peripherals Inc.'s** fourth-quarter sales leaped 49 percent to \$620.5 million for the period ended Dec. 31, 1992. However, the San Jose-based company's profits fell 36 percent to \$8.5 million as a result of its acquisition of Archive Corp. last year.

For fiscal 1992, the company's sales rose 40 percent to a record \$2.24 billion, and profits increased 31 percent to \$121.1 million.

► **Iomega Corp.** reported lower fourth-quarter sales and profits.

The Roy, Utah-based company's profits for the quarter ended Dec. 31, 1992, plummeted from \$4.3 million to \$41,000. Sales, meanwhile, dipped from \$39.4 million to \$37.5 million.

For fiscal 1992, profits were \$4.7 million on sales of \$139.2 million, compared with profits of \$12.3 million on sales of \$136.6 million in fiscal 1991. □

Aldus

From Page 36

executive ranks. Over the past year, Aldus has lost several key officers as well as product and sales managers.

Last week, Kenneth Grunzweig, a former Lotus Development Corp. vice president, was named Aldus vice president of marketing. He replaces Larry Spellhaug, who left more than a year ago. Jill Bamburg, Aldus' director of strategic planning who also assumed marketing responsibilities on an interim basis, left the company last month.

Sandy Smith, formerly Aldus vice president of operations and acting chief operating officer, recently was

named permanent chief operating officer. She replaces Phil Herres, who with Aaron Howard, vice president of sales for Aldus USA, departed last April.

Other managers who were laid off or resigned from Aldus in the past year include Mike Sherwood, PageMaker product manager; Dave Cloutier, head of developer relations; Dennis Schnopple, head of testing; Nancy Case, manager of market research; Ken McFall, developer of the kanji version of PageMaker; Howard Campbell, the technical lead for PageMaker 6.0; and Steve Miller, head of outside sales. □

Telebit, Octocom to merge in stock swap

Sunnyvale, Calif. — Telebit Corp. and Octocom Systems Inc. last month signed a letter of intent to merge through a stock swap.

Under terms of the deal, Octocom Systems, which makes network access products for international markets, will trade all its stock for 5 million shares of Telebit stock. Tele-

bit, based here, produces LAN access products in the United States.

Brian Cohen, executive vice president and chief financial officer of Chelmsford, Mass.-based Octocom, said the combined company will "have the critical mass to compete with companies such as U.S. Robotics Inc." □

MacWEEK index

THE BIG GET BIGGER

Nearly all the top 10 personal computer makers enjoyed solid gains in unit sales in the United States last year.

COMPANY	UNITS (THOUSANDS)	'91-'92 CHANGE (%)
Apple	1,422.7	20
IBM Corp.	1,319.8	-4
Compaq Computer Corp.	740.1	75
Packard Bell Inc.	570.9	38
Tandy Corp.	455.0	22
Gateway 2000 Inc.	387.8	62
AST Research Inc.	379.3	33
AT&T Co.	366.2	-4
Toshiba America Information Systems Inc.	340.5	23
Dell Computer Corp.	307.8	84

Source: PC Market Update, BIS Strategic Decisions Inc.

Business

BRIEFS



Lotus Q4 earnings up, revenues down

Cambridge, Mass. — Lotus Development Corp. posted a 152 percent increase in fourth-quarter earnings.

As a result of extensive restructuring of operations in North America and Europe and the sale of securities in Sybase Inc., the software company's net income was \$14.6 million, compared with \$5.8 million a year earlier.

Revenue was down slightly, to \$246 million from \$249.2 million. Lotus attributed the drop to declining software prices.

For the fiscal year ended Dec. 31, 1992, net income rose 87 percent to \$80.4 million from \$43.1 million last year. Revenue climbed 9 percent to \$900.1 million.

In a prepared statement, Lotus CEO Jim Manzi said sales of the company's Windows applications picked up during the fourth quarter. For the year, he said, sales of Windows applications increased 140 percent.

Licensing revenues give boost to Frame's results

San Jose, Calif. — Behind a strong fourth quarter marked by a leap in licensing revenues, Frame Technology Corp. posted record sales for the year ended Dec. 31, 1992.

Frame's 1992 revenues totaled \$76.5 million, a 45 percent increase from \$52.9 million in 1991. Meanwhile, the company's earnings more than doubled to \$5.7 million.

Frame, which develops tools for electronic publishing and document creation, also posted strong fourth-quarter numbers.

Revenues increased 76 percent to \$24 million, while net income skyrocketed to \$2.9 million, compared with \$189,000 for the same quarter a year ago. Licensing revenues jumped 111 percent during the quarter to lead the sales surge.

Apple extends benefits to partners of gay employees

Cupertino, Calif. — Following the lead of other high-tech companies, including Lotus Development Corp., Apple has extended its domestic-partners program to give medical benefits to the partners of gay and lesbian employees.

The new program, which is open only to same-sex couples, goes into effect July 1 and will include medical, dental, optical and mental-health benefits.

Apple adopted a policy last year that gave all domestic partners of employees access to other company family benefits.

In a letter to employees, Apple CEO John Sculley said the company will offer medical benefits only to same-sex couples, since they don't have the option to marry legally and become eligible for such benefits. The policy applies to Apple's 8,500 U.S. employees.

Zenith

From Page 36

IV would be divided between Buffalo Grove, Ill.-based Zenith and Government Technology Service Inc., a Chantilly, Va.-based company.

Mike Martucci, Apple Federal Systems marketing manager, said the company is still interested in the contract.

The bidding process, which began in 1991, has been closely watched by government users because it was intended to streamline the purchase process and put the newest personal computers on desktops before they became obsolete.

This is a common problem at the federal level, where processing purchase orders can take as long as five years.

Nearly two dozen companies originally bid, and in November 1991, the Air Force placed the order with CompuAdd Corp. and Sysorex Information Systems Inc.

But that order was canceled on appeal and awarded to Zenith last September. Ten days later, a half-dozen companies — including Apple — protested. In December, a federal administrative law judge ruled that the contract be withdrawn.

After Zenith's award was voided, the procurement was sent back to the Air Force for reconsideration (see MacWEEK, Jan. 11).

The announcement won't necessarily end the flap, however, because competing vendors could again object to the contract. □

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EDITORIAL

A new beginning for HyperCard

Kudos to Apple for taking back HyperCard — on the assumption that the move means the company finally is ready to give the product the enhancements and support it needs.

Clarix Corp., steward of the "software erector set" for the last two years, produced some significant improvements, including System 7 support, QuickTime extensions and a runtime version. But in hindsight, the 1990 transfer of HyperCard to Clarix clearly was a misstep. The software subsidiary's heart has always been in the mass market, not on the developers and scriptors who are HyperCard's real audience.

Besides, Clarix had to bear the burden of supporting millions of users who received free copies with their Macs. And with Apple continuing to bundle the program until last fall, Clarix — like so many third-party developers before it — was in the untenable position of trying to compete against a free product.

HyperCard's new home, Apple's Developer Tools group, should be a better fit, and Apple's announced inten-

tion to integrate the program with AppleScript makes sense: It will give HyperCard new power, enabling stack developers to reach out into other applications to create custom solutions, and at the same time a familiar environment and tools should make the new scripting system more approachable for beginners and power users alike.

But doing right by HyperCard and tens of thousands of in-house developers, educators, multimedia producers and novice programmers who depend on it requires much more than the AppleScript connection. Integrated color, improved performance and better database features are overdue. A version that runs in native mode on PowerPC Macs will be needed before long. And we'd like to see an Apple-supported stack player for Windows, as well as an easy migration tool for the apparently orphaned users of Aldus SuperCard.

We are glad to see things moving in the right direction, but we'll reserve judgment until we are convinced that a new home means HyperCard and its users will get the support they deserve. □

Commentary

Data highway's future with Gore behind the wheel

With Sen. Albert Gore's recent elevation to the vice presidency, high-speed networking is acquiring a new cachet the previous occupant of the office apparently couldn't grasp.

Modernizing the nation's data infrastructure has been one of Gore's holiest grails. As a senator, he sponsored a government project to build a high-speed network for connecting supercomputers.

Now, as vice president, he may finally have the clout to overcome Capitol Hill gridlock. However, before we all start writing our representatives to support this noble cause, we should consider several problems with our government getting into the bandwidth business.

Policy wonk. The first difficulty I have with this idea is how the question is couched. I mean, how can we not be in favor of keeping our country at the forefront of computing and networking? Indeed.

But the same reasoning can apply to so many government programs as to make

your head, and wallet, spin. Have we ever seen any proposed government program that wasn't vital to our national interest?

I'd feel more comfortable if we taxpayers were told which program will be "gored" to make room for this one in the budget.

Secondly, the very concept of the same government that is first among its industrialized peers in bureaucratic double-think trying to design and implement something as inherently complex as a nationwide data superhighway is enough to give me nightmares. AT&T Co. Chairman Bob Allen recently argued that the building of such a network ought to be left to the private sector. Certainly, I wish these noble free marketers had been around when NASA commissioned the first million-dollar commode.

On the other hand, such a terrific community resource as the Internet arose from the same defense contracts that brought us \$10,000 hammers. And notwithstanding AT&T's better vision and performance of late under Allen, the private sector has achieved little so far as a builder of data highways.

We the PCs. Which brings us to some happier developments, namely Pacific Bell's recent promise to bring ISDN (Integrated Services Digital Network) to every computer in the West. This will run only about \$4 billion to \$5 billion, barely enough to cover one season of senatorial boondoggles.

The main advantage of ISDN over a supercomputer data highway is that ISDN performance will be accessible by the masses instead of a few big companies with big computers.

When ISDN graduates from curiosity to commodity, the marketplace is likely to treat it with the same creative disrespect it accorded to its analog predecessor. Beyond higher volumes and lower prices, success will be asserted in the ways ISDN services escape the original intent of their creators.

For example, instead of just moving the same kind of data we move today much faster, imagine the new kinds of data that can be shipped through ISDN's broader pipeline.

If white-collar productivity is a key part of our competitiveness in a world economy, then ISDN is vital to our national interest.

The previous administration took corporate dinosaurs to Japan. The new one seems to have a sincere interest in advanced and advancing technology. Let's hope it will concentrate on organizing and refereeing, instead of entering the playing field. I lived in Europe for 41 years and believe me, the last thing our besieged government needs is a Ministry of Telecommunications. □



JEAN-LOUIS GASSÉE

LETTERS



'MacPorn' robs attendee of her annual special moment

The one constant in my life is the Macworld Expo in San Francisco. Regardless of the upheavals in my life — changes in career, financial and marital status — I wouldn't miss it. And even as others lament the loss of the original "Apple spirit" and the annual increase in suit-to-bluejeans ratio, my enthusiasm has remained unwavering.

But this year at Moscone Center, it finally happened. The magic faded. The bubble burst. You see, silly (blond) woman that I am, I actually believed the computer was the great sexual equalizer. Whether developing software (which I do for a living, but of course my prospective dates think I'm an aerobics instructor) or interacting on America Online, those electrons zip around just as well for me as for my male partner. And C doesn't seem to care if the person who forgot the semi-colon is wearing a lace bra.

But I was only fooling myself. Computers, like trucks, most sports and, of course (as Barbie herself recently said), math, are for boys. When I first walked by the "interactive adult XXX girlie" booth I was impressed — as a software entrepreneur by the huge crowd — until I realized they were demonstrating something close to virtual rape. The good capitalist and First Amendment supporter in me thought, "Well, they *are* driving the sales of computers, and that must be good for the rest of us." The socially responsible business owner in me thought, "Making a buck is never worth exploiting a socially damaging racial or sexual stereotype." But the woman in me felt, well, queasy. I just couldn't believe I was at Macworld Expo, my all-time favorite place to be, and feeling so uncomfortable.

But then the businessperson in me woke up and realized how shortsightedly stupid this disturbing MacPorn trend is. Even Apple has launched grade-school research efforts aimed at increasing female participation in the use of computers. Come on guys, wouldn't you like to increase your market by another 80 percent? Guess not. My suggestion is to do what my local video stores do, which is to keep the "adult" stuff in its own, clearly demarcated section.

A footnote: On the way home from the expo I stopped in at an electronics store for a cable. At the checkout counter (where supermarkets display the tabloids) I noticed a nifty little personal diary. It detailed two different categories of users — men and women, with different instructions on how each would use it. It said, "Men — track your goals" and "Women — record your special moments." I looked at the guy next to me and said, "How sad for you. I am merely goalless, but you, why you have no special moments."

Gotta go now. I have a floor to scrub.

Kathy Kozel, co-founder

Planet Software, Redondo Beach, Calif.

Does Microsoft have an ally in its multimedia market push?

The story on Macromedia Inc., "Macromedia rolls with the changes" (MacWEEK, Jan. 11), roused me to comment. If Microsoft Corp. is attempting to take over the multimedia market, it couldn't have a better ally than Macromedia. By acquiring and then "phasing out" cost-competitive products such as FilmMaker and Magic!, Macromedia has successfully locked the Mac community into MacroMind Director, its incredibly overpriced flagship product.

At \$1,200 per copy for Director 3.1 and another \$350 per year for technical support, it's no wonder that Mac-phobic information-systems directors already find it easy to justify specifying Windows-based animation software for a fraction of Director's price. On the 3-D graphics front, the situation is even worse, with the Macromedia-recommended combination of MacroModel and Three-D topping the \$3,000 mark. This is *desktop* software?

Macromedia needs to learn a lesson from Apple marketing: If you want to grow your business, offer your customers more value for their dollars. If Macromedia truly wants to become the "multimedia one-stop shop," it needs to learn the main lesson of business in the '90s and cut its prices drastically. Otherwise, the Windows-based competition will take over the market on sheer cost effectiveness, and the Mac will again be relegated to niche status.

Edward F. Arnold, Datawright, Chicago

New System Enablers too fat, too much trouble for managers

Regarding Peter Breis' letter "Has Apple taken wrong turn with new System Enablers?" (MacWEEK, Jan. 25), your response that the current version of the Enablers are available only on AppleLink and Apple Internet FTP (File Transfer Protocol) server just makes Mr. Breis' point.

The Enablers are not available on disks and, therefore, are not available to many users without an AppleLink account. You can't get the Enablers from your dealer, user group or from services such as GENie or CompuServe.

The Enablers also are not well identified as to what machine they enable. You did not address the problem of the System folder getting fatter and fatter with the residue from old installations. What are system administrators to do when even MacWEEK deserts us?

Dave Weikert, director, data processing
Synertech Associates Inc., Arlington, Va.

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

The Mac Manager

Thanks for listening, Apple, we still have more to say



DON CRABB

Dateline Cupertino, Calif., Jan. 27, 1993. The press release from Claris Corp. reads, in part, "As part of a continually increasing commitment by Apple to world-class development tools, Apple and Claris today announced they will move product development of HyperCard into Apple's Developer Tools organization."

Apple listens and its customers win!

Now, I won't brag here claiming this victory of common sense over corporate brain damage had anything to do with my columns on the death of HyperCard. Believe it or not, even I lack that much hubris. But this episode should show Mac managers that when you really confront Apple with a compelling argument, it listens and acts.

The critical question for Mac managers, of course, will be what direction HyperCard takes as it's rolled back into Apple, and when customers can expect: (a) the long-awaited HyperCard 2.5 with its color support; (b) the first new release of HyperCard that works with AppleScript, AOCe (Apple Open Collaboration Environment) and other system technologies; and (c) a user release of HyperCard that's less brain dead than the HyperCard Player.

The next generation. Apple does deserve our praise for making the tough decision to spend time, money and effort on advancing HyperCard. But we don't want to let up on Apple yet. Now that it's put HyperCard on full-time life support, we must tell Apple the features and capabilities we need from HyperCard — the next generation.

And believe me, developers are ready to jump on the revitalized HyperCard bandwagon. Consider this edited letter from Tom Sobut, a developer for The Equity Center International in Ontario:

"There is no imaginable way that I could have produced [our current HyperCard-based system] in Pascal or C. We want to pay for [a new HyperCard]! We know as developers, the only way a program really lives and grows is when people support it by paying a fair price for it. If HyperCard did not exist, we'd need to hire at least two other programmers. Seriously, our company would easily pay \$10,000 a year to use HyperCard and see it improved in speed, features and code security. I'm sure there are other companies who might feel this way." Well said, Mr. Sobut. Apple can make money and give us the real HyperCard we've longed for.

Timing is everything. The key for Apple will be timing. With Microsoft Corp.'s Visual Basic foundering under Windows and no good comprehensive developers tools yet available for Windows NT, Apple is uniquely poised with HyperCard to build a state-of-the-art developers environment that gives Mac managers even more reason to stay with Mac. And because it's HyperCard, users also will be empowered to continue to build their own personal and groupware applications.

Before the end of the summer, we need to see Version 2.5 shipping. By no later than the end of the year, we need to have the first AppleScript version available. And by no later than the end of next year, Apple ought to ship a new integrated developers tool kit (a k a the MPW replacement) that includes a new HyperCard.

Hey, Apple, thanks for listening to your customers. And of course, we'll have more to say ... □



"Ummm ... let me consult my magic spell checker."

Tired of translating files between the Mac and DOS/Windows just to read what the other guy has to say, then losing half the formatting in the process? Cross-platform applications are sprouting up all over to make clunky file transfers seamless and transparent. Each department can still keep to its favorite machine, and the application stays the same. This sounds like the answer to a manager's prayer — diversity within unity — but, as with any panacea, there's more to buying and supporting cross-platform applications than meets the eye.

Not every user of IBM PCs or compatibles is going to forgo WordPerfect just because some Mac users dote on Microsoft Word, or vice versa. How will you decide which is the best application? Personal preferences aside, what's great on one platform may come up short of expectations on another.

While on the face of it, Mac and Windows cross-platform applications may be difficult to distinguish, underneath lurk a host of issues, such as file-naming conventions, that can give the unprepared support manager more headaches than a crashed server.

In this special report, we look at common problems and solutions to cross-platform buying and support. We also test interoperability between Mac and Windows versions of Deneba Software's Canvas, Claris Corp.'s FileMaker Pro and QuarkXPress.

Cross-platform apps: Is now the time to buy?

By Jonathan Oski

With cross-platform applications on the rise, managers must choose carefully.

In the new world order of interoperability, a peaceful if uneasy coexistence reigns among platforms on large corporate networks. This is thanks largely to the mitigating influence of network operating systems, such as Novell Inc.'s NetWare, Banyan Systems Inc.'s Vines, Microsoft Corp.'s LAN Manager and IBM Corp.'s LAN Server. These network operating systems support a variety of client workstations, including DOS, OS/2, Windows, Macintosh and Unix, and most also offer extended features such as electronic mail and shared print queues.

A network operating system by itself, however, will not buy you all the functionality you may want. While a network operating system provides a means by which different client workstations can access the same server and recognize shared files, users may have to convert files to their native application format, often losing valuable formatting or graphics instructions in the process.

Cross-platform applications, such as Microsoft Excel 4.0, running on

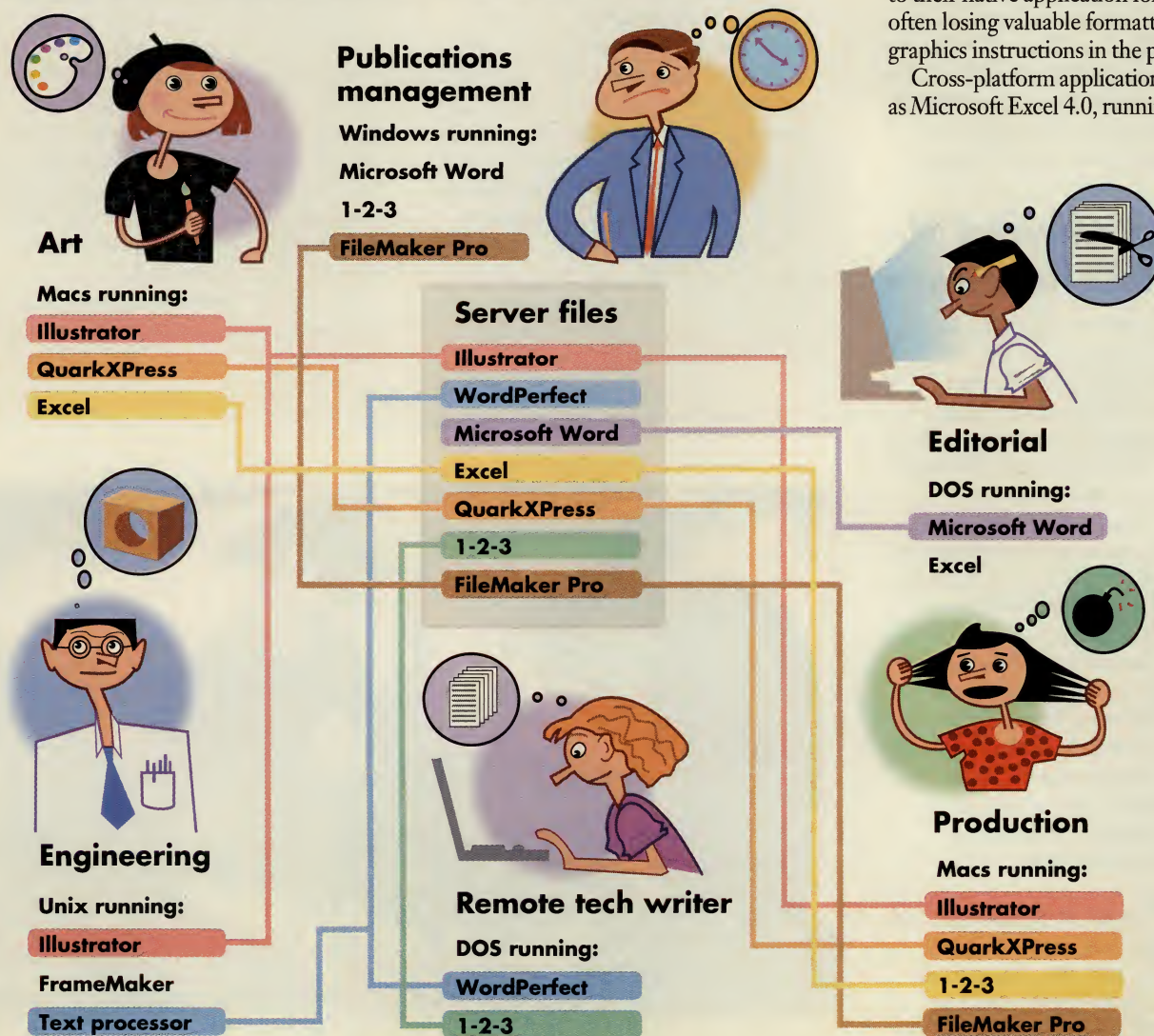
top of the network operating system, however, allow both Windows and Mac users, for instance, to freely share "live" documents without conversion from one format to another. Sharing live documents eliminates the need for users to convert or translate files continually when accessing them from different desktop platforms.

"We are starting to look at cross-platform applications as we attach our Mac network to our existing Novell network," said Frank Chiacchieri, director of microcomputing at Little, Brown and Co., a publishing company in Waltham, Mass. Such a capability allows the company's managing editor to track book production throughout the company's various divisions. Currently, some divisions use DOS, and others rely on the Mac. "This multiplatform approach has made it difficult for the managing editor to collect critical information from our separate divisions," Chiacchieri said. "Cross-platform applications will hopefully eliminate our reliance on 'sneakernet' as a means of data transfer."

Of course, crafty users have been successfully sharing data between different platforms for a number of years. Tools such as DataViz Inc.'s MacLinkPlus/PC and Apple File Exchange easily convert files between DOS-Windows and the Mac. But where there is a need for continual access to the same file, such as a spreadsheet, from multiple platforms, such an approach can be cumbersome and inefficient as an enterprisewide strategy for cross-platform file sharing. In short, it takes too long to make the conversions, and files are accessible by only one user at a time. "Products such as [Claris Corp.'s] FileMaker Pro 2.0 [for Mac and Windows] and Microsoft Excel and Word are more attractive since they make data more accessible to everyone," said John Heckendorn, MIS manager at software developer Berkeley Systems Inc. of Berkeley, Calif.

Standardization and compromise. Theoretically, cross-platform applications should make life easier for all concerned. Not only can many users share files quickly and painlessly but cross-platform applications reduce the

Document management in a mixed environment



risk of confusion that may result from having multiple copies of the same file in different formats.

Practically, however, the emergence of cross-platform capabilities makes tough choices even tougher for microcomputer managers faced with deciding between competing applications. Problems can arise when trying to standardize on a single cross-platform application if users feel their needs are compromised in the process. In recognition of such human factors, Little, Brown and Co.'s Chiacchieri supports both WordPerfect (DOS) and Microsoft Word (Mac). "We may continue to use these applications, trading documents back and forth between platforms, instead of requiring a group of users to change to a cross-platform application," he said.

Should the mere availability of cross-platform applications influence an organization's application software strategy? Should an organization standardize on an application, such as Microsoft Word, Lotus 1-2-3 or WordPerfect, as a cross-platform application vs. buying a "best-of-class" product for each platform?

To answer this, managers must consider whether it is more cost-effective to support each platform separately, support applications rather than platforms, or some mix of the two. A manager at a New York-based management consulting organization who asked not to be identified assessed the situation this way: "Because of our heavy reliance on [Microsoft] cross-platform [applications], we have made purchasing arrangements with Microsoft for Word and Excel. Are we using best-in-class? Maybe on the Mac. On the PC side, I think [Lotus Development Corp.'s] Ami Pro would be better-suited to our word processing work."

Beyond document sharing. Nowhere are the advantages of cross-platform compatibility more obvious than in the database arena, where multiple users require continuous access to the same data. Application development tools that let you create cross-platform database-management applications are quickly gaining favor among some managers. One of the strongest cross-platform development kits available is Blyth Software Inc.'s Omnis 7 and Omnis 7+, but this market is still considered to be in its infancy. ACI US Inc.'s 4th Dimension is an extremely popular development environment for the Macintosh, yet ACI US has yet to commit to a cross-platform offering.

Clarix recently entered the cross-platform market with the release of FileMaker Pro for Win-

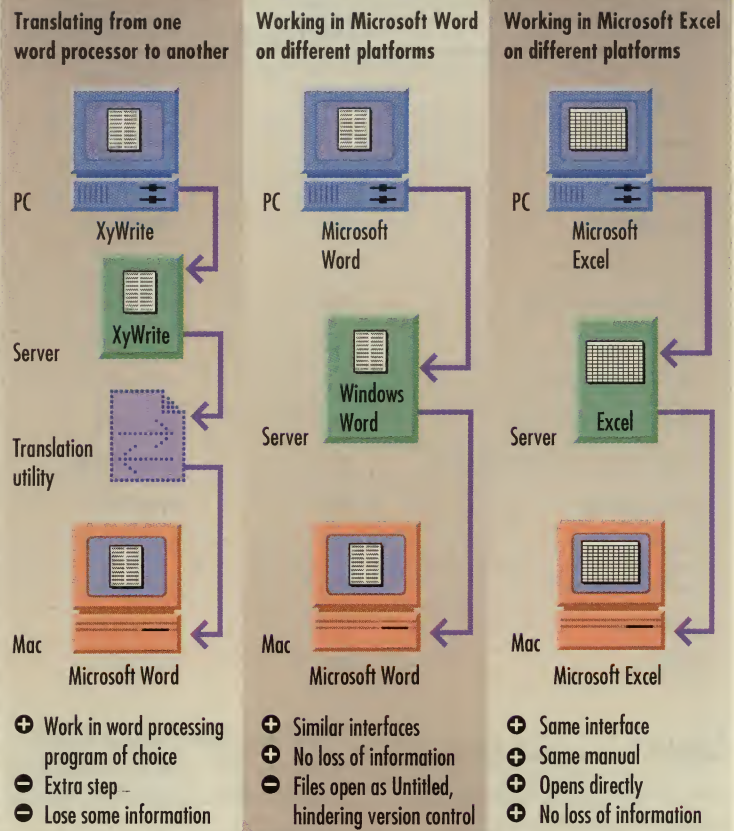
dows (see story, Page 48). This would seem like an easy solution to cross-platform data sharing. However, Clarix does not use a standard approach to file locking and requires that the AppleTalk protocol stack be loaded on Windows clients that want to share databases with Mac clients.

According to Rich Columbre, co-owner of The Support Group Inc., a Boston-area consulting and training company, "FileMaker Pro for Windows has caused quite a bit of excitement among our clients who want to share data between their Windows and Mac desktops." He cautioned, however: "There are font, file-naming and color-mapping issues that require considerable thought before you begin developing a cross-platform [FileMaker] application. Then you have the network protocol issues to worry about. At this time, sticking with AppleTalk is the only solution we would recommend."

Microsoft's FoxBASE also holds promise for many cross-platform

See *Buying*, Page 46

Three examples of cross-platform transfer



NEVIN BERGER

Cross-platform support: Plan early, plan often

By Jonathan A. Oski

Planning can reduce cross-platform support overhead.

Working efficiently within a cross-platform environment involves more than just connecting all your workstations to the same network and buying a few applications. Proper deployment of the technologies is at least as important as choosing the right products.

"Making the right buying decisions is just the beginning," said Rich Columbre, co-owner of The Support Group Inc., a Boston-area consulting and training company. "In order to be successful in deployment of cross-platform applications, you need to spend the time planning upfront to resolve the differences between platforms that will persist in spite of good cross-platform applications."

Lowest common denominator. By reducing or eliminating the time your support staff spends converting data to and from various formats, you can concentrate efforts on helping users tackle real business problems. This is where a little foresight goes a long way.

The operating systems that

comprise your cross-platform environment (for example, Mac, DOS or OS/2) impose limitations on one platform that must be adhered to on all platforms. In many cases, such as file-naming conventions, simply subscribing to the lowest common denominator should resolve conflicts between platforms. Understanding how different operating systems handle compatibility issues in a cross-platform environment can help lessen the routine support demands placed on you while allowing you to move freely from one platform to another and/or share files between two or more platforms.

Log-on limitations. Connecting to a network and accessing a shared file volume often requires that you first enter a user name and password. Different network operating systems impose varying limits on the length of a user name and password, and some also restrict the use of certain characters. Mac users who must access these file services from the standard AppleShare Chooser interface are limited to a

password length of eight characters.

Some network operating systems, such as Banyan Systems Inc.'s Vines, allow IBM PC or compatible users to establish service connections without specifying which server they are located on. Mac users, because of the limitations of AFP (AppleTalk Filing Protocol), do not have this luxury and must mount file services on a server-by-server basis. This relatively small inconvenience is noticeable quickly to users accustomed to sharing a single platform.

File-naming restrictions. File-naming conventions require more-significant adjustments in a cross-platform environment. Again, the lowest common denominator — DOS in this case — dictates the convention to be followed. File naming has several facets. First, DOS file names are limited to 11 characters — an eight-character name and a three-character extension. Mac file names can be up to 31 characters, and OS/2 and Unix allow even longer names. For DOS and Mac users to freely exchange

See *Support*, next page

Common cross-platform file mappings

FILE TYPE	DOS EXTENSION	MACINTOSH TYPE/CREATOR
ASCII text file	.TXT	TEXT/txt or TEXT/MSWD
Canvas	.CVS	drw2/DAD2
FileMaker Pro	.FM	FMPR, FMPR
GIF graphic file	.GIF	GIF/Bozo
Lotus 1-2-3 worksheet	.WK	XLS4/XCEL
Microsoft Excel worksheet	.XLS	XLS4/XCEL
Microsoft Excel chart	.XLC	XLC3/XCEL
Microsoft Excel workbook	.XLW	XLW4/XCEL
Microsoft Excel macro sheet	.XLM	XLM3/XCEL
Microsoft Word for Windows document	.DOC	WDBN/MSWD
Omnis 7 application	.APP	07SA/07SS
Omnis 7 data file	.DF1	07SD/07SS
PageMaker document	.PM4	ALT4/ALD4
QuarkXPress	.QXD	XDOC/XPRS
TIFF file	.TIF	TIFF/8BIM

Support

From previous page

files, all users must abide by file-naming conventions that are acceptable to the lowest common denominator.

Not so obviously, many DOS and Windows applications use the file extension when opening files. For example, Lotus 1-2-3 looks for files with an extension beginning with WK. If a Mac user creates a document with Lotus 1-2-3 for the Mac and saves it to a file volume shared by PC users, PC users of 1-2-3 would not recognize the file unless the Mac user followed the naming convention imposed by DOS and 1-2-3.

On the flip side, Mac applications can open a file by recognizing its type and creator. These are two four-byte strings stored in the resource fork of every Mac file. DOS applications know little about Mac type and creator designations, and thus Mac users cannot easily open files created by DOS and

Windows applications — even if they have been created by the same cross-platform application, such as Microsoft Excel 4.0.

Network operating systems such as Vines, Novell Inc.'s NetWare and Microsoft Corp.'s LAN Manager typically handle this problem by letting you associate a DOS extension with a Mac type and creator. For example, the network administrator can specify that all files with an .XLS extension have a type and creator of XLS4 and XCEL. This allows the Mac user to view these files with their proper icons and to open them by double-clicking.

The tip of the iceberg.

Although file-naming conventions, extensions, and type and creator associations can get you started toward establishing a seamless cross-platform environment, other file-related support issues run deeper, according to David Alsberg, an independent consultant with Abbadata in Astoria, N.Y. Alsberg stressed that

there is more to cross-platform compatibility than using the same application on two types of workstations.

"There are issues of different font specs, differences in the new line spec for ASCII text, major differences in graphics specification with lousy translation between two formats, and vendors with cross-platform products that claim better compatibility than is actually provided," such as Word Perfect, Microsoft Word and Aldus PageMaker, he said. Although files from these programs generally translate well between platforms, users consistently have problems with elements such as color and fonts.

Font issues can be resolved, but you need to minimize the number and types of fonts in use to ensure that half your time isn't spent helping users reformat documents because of font differences.

Embedded graphics is another problem area. Bit-mapped files popular in many Windows applications are used primarily to embellish database applications or for embedding graphics within a spreadsheet or text document. The Mac uses either PICT-format objects or bit-mapped objects, but neither are directly compatible with PC formats. Some cross-platform applications, such as Microsoft Excel and Word, can perform these translations automatically, but you are apt to lose some information, such as color, from your final product.

Charles Herrera, data communications manager at Cisco Systems Inc. of Menlo Park, Calif., resolves graphics formatting problems using standard, cross-platform formats. "[In our organization] common file formats become important; PICT, QuickTime, TIFF, SYLK and RTF are used to exchange files," he said.

Even with some cross-platform applications, file-conversion tools, such as DataViz Inc.'s MacLinkPlus/PC, are invaluable in a heterogeneous environment. These utilities offer considerably more conversion options than cross-platform applications. Translation between disparate applications such as Frame Technology Corp.'s FrameMaker and T/Maker Co.'s WriteNow (on Mac and NeXT platforms) or Lotus Development Corp.'s Symphony and Microsoft Excel (on Macs and PCs) can easily be handled by MacLinkPlus/PC. MacLinkPlus/PC can translate almost any PC graphics format to Mac PICT.

Printing. Shared printing also requires some forethought in a mixed-platform environment. If all platforms support PostScript printers, the job is easier, but there are other potential pitfalls. If you are using PC applications that do not support PostScript, chances are you

Simple support tips

The following list outlines common cross-platform support problems and offers solutions to help streamline cross-platform file sharing.

- ▶ **Lowest common denominator.** Adhere to the most limited aspects of the operating systems on your network. For example, Mac users must save files using the 11-character DOS file-naming convention to ensure that DOS users can access those files.
- ▶ **File types.** Operating systems recognize files in different ways: DOS and Windows applications look at the three-character extension in a file's name; Mac applications look at a file's type and creator. If your network operating system cannot automatically convert this information, you can use a utility such as Insignia Solutions Inc.'s AccessPC before transferring files between platforms.
- ▶ **Fonts.** Minimize the number and type of fonts in use to ensure accurate translation between platforms. Shared fonts should have the same name and come from the same manufacturer; otherwise, critical font metrics information may not match. Character mapping differs between platforms, so some special characters (such as ligatures from the Mac) will not transfer across platforms.
- ▶ **Graphics files.** Standardize on common file formats between platforms, such as TIFF. Other formats, including PICT, sometimes do not transfer without translation. Applications such as DataViz Inc.'s MacLinkPlus/PC offer considerable graphics and text file-translation options but require an extra step.
- ▶ **Printing.** Consistency between PostScript printer drivers on different platforms will eliminate the need to reinitialize printers between jobs.

will have to use a "smart" printer, such as those from QMS Inc. or Hewlett-Packard Co., which employ emulation sensing to distinguish page-description languages. You also can use a different printer for each platform.

With respect to PostScript printers, the main hassle is maintaining consistency among the printer drivers used, to eliminate the need for time-consuming printer reinitialization. For example, if PC and Mac users download different PostScript libraries to a printer, performance will suffer as the printer reloads the header while flipping back and forth between printing jobs from these different platforms.

A bottom line. Having laid the groundwork for successful cross-platform computing, you now can sit back and wait for the phone to ring with support calls. Following the guidelines here should go a long way toward mitigating some of the problems you may face. By establishing an effective cross-platform computing infrastructure for your organization, you can begin to eliminate some unnecessary support overhead. □

Cross-platform file-naming rules

FILE SYSTEM	NUMBER OF CHARACTERS	CASE	ILLEGAL CHARACTERS
DOS (and OS/2 standard, using File Allocation Table*)	8 max. with an optional 3-character extension	Insensitive and not preserved	angle brackets ([]) asterisk (*) colon (:) comma (,) equals sign (=) null plus sign (+) question mark (?) quotation marks (") slashes (/ \)
Macintosh	31 maximum	Insensitive but preserved	colon (:) null
Unix System V	14 maximum (Berkeley Unix allows 255 max.)	Sensitive and preserved	slash (/) null

*OS/2 using High-Performance File System has same limitations but allows up to 32 characters maximum in a file name.



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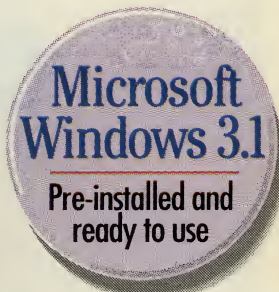
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Buying

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advocates. As David Alsberg, an independent consultant with Abbadata in Astoria, N.Y., said, "Forthcoming upgrades to FoxBASE for the Mac should help to improve the cross-platform interoperability of [FoxBASE] applications."

Building a strategy. Is it too early to let cross-platform requirements dictate your

buying decisions? To a large degree, this depends on your organization and its commitment to the various platforms in use. There are three general approaches you can take to allow cross-platform document exchange. The first, and most stable, is to use a translation utility such as the ones mentioned earlier. The second approach is to use applications that can read many file formats. The ultimate method is to select an application that uses the same file format on

many platforms, thereby eliminating any need for conversion.

If your users do not have a need to freely exchange live documents back and forth, cross-platform needs can be met using applications that can read foreign formats and convert them automatically. Many popular word processing and spreadsheet programs can read documents created with other programs. But, as Abbadata's Alsberg pointed out: "Document conversion often is accurate only for

basic documents. There is a great deal of disparity between the way different vendors, like Microsoft and WordPerfect, use a term, such as style sheets." Alsberg laments that styles and macros from a WordPerfect 5.1 document are not translated accurately when converted by Microsoft Word 5.0 for the Mac. When discrepancies arise, Alsberg said, "you get into a finger-pointing situation, and the user is bound to come out on the short end."

The role of the NOS. In making your forthcoming buying decisions, most users agree that you should focus on underlying technology (your LAN and network operating system, for example) to provide the underpinning for your cross-platform applications. As Chiacchieri said, "Since our network operating system offered support for PCs and Macs, connecting the two networks seems like a good place to start in terms of creating a cross-platform environment."

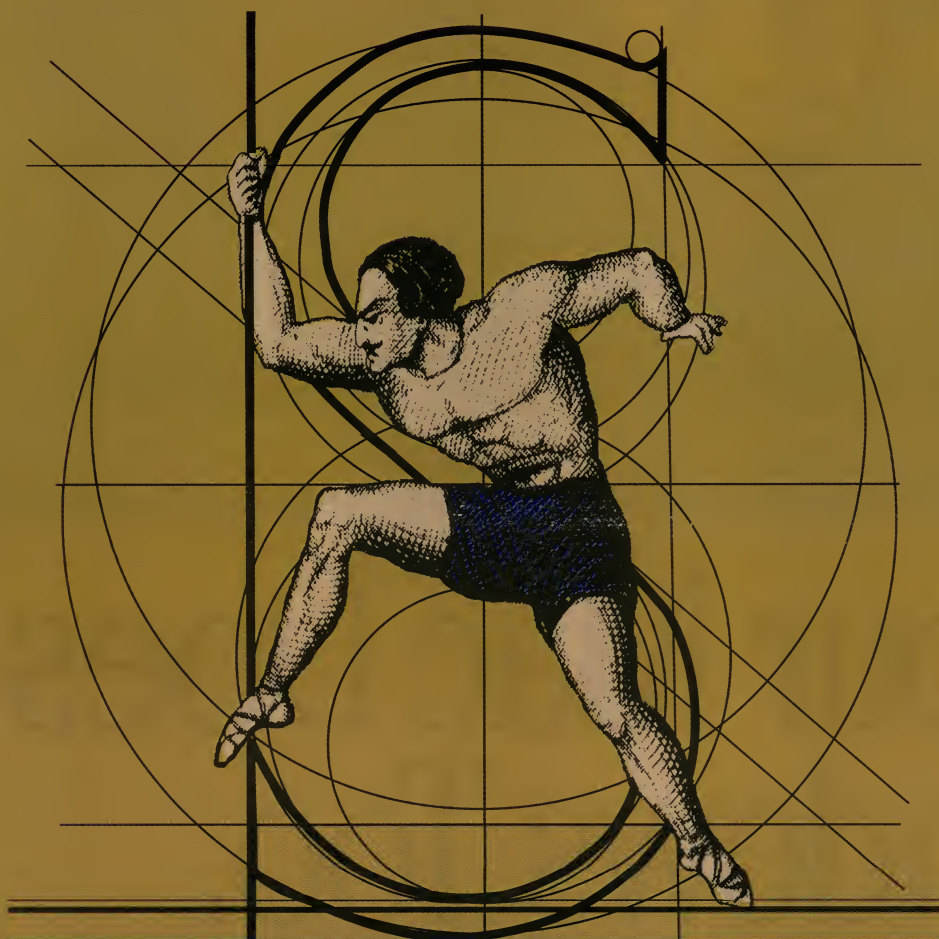
Cross-platform capabilities occupy center stage in many of the network operating system providers' latest offerings. Novell has recently indicated that its native protocol, IPX (Internetwork Packet Exchange), will be implemented on the Mac, opening the floodgates for a variety of new cross-platform applications. "Novell is clearly making the right moves to create seamless server-based and peer-to-peer environments," said Berkeley Systems' Heckendorn, "so NetWare becomes the obvious first choice in selecting server platforms."

For other users, such as Charles Herrera, data communications manager at Cisco Systems Inc. of Menlo Park, Calif., Unix offers the necessary cross-platform capabilities. "Cross-platform desires have influenced our direction in file servers; we are moving back toward Unix-based servers that understand the AFP (AppleTalk Filing Protocol) suite," Herrera said. In instances where cross-platform needs can be handled simply by shared file access, there are more solutions available. One strong candidate in this area is Sun Microsystems Inc.'s Network File System protocol, since it is supported by software on DOS, Mac and Unix clients.

Cross-platform productivity. When it comes to selecting productivity applications, there are a number of good cross-platform alternatives available. The question you must ask is whether you will be making compromises to accommodate your cross-platform strategy. In the spreadsheet arena, Microsoft Excel and Lotus 1-2-3 are safe bets. It gets a bit muddier in the word processing market because the market leaders on respective platforms (Microsoft Word for the Mac and WordPerfect for DOS-Windows) do not share files well. Cross-platform messaging and forms routing await the shakeout among proposed standards such as Vendor-Independent Messaging, (AOCE) Apple Open Collaboration Environment and Microsoft's MAPI (Messaging Application Programming Interface).

As more cross-platform applications become available, the platforms users have on their desktops will become less of an issue. A long-term cross-platform strategy should rely less on repetitive file-conversion tasks and more on maximizing individual productivity and easing information access. □

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Bridging the platform gap

MacWEEK
looks at new
products
developed in
the quest
for cross-
platform
compatibility.

Interoperability may sound like fingernails on a blackboard to a poet, but to Macintosh managers the word has a sweet ring. It means the existence of Mac and Windows versions of the same program with nearly identical interfaces that work in almost exactly the same way.

More important, it means users can share files seamlessly between these two platforms.

That's the ideal embodied in the word "interoperability" — but as we discovered in this and other examinations of the subject, there can be many a stumble before you reach the finish line (see MacWEEK, Aug. 4, 1992).

Version synchronization. In this section of the Cross-platform Special Report we tested interoperability between Mac and Windows versions of Claris Corp.'s FileMaker Pro, Deneba Software's Canvas and QuarkXPress. Our first challenge was realizing that not all Mac and Windows versions of the same program are in sync developmentally.

Of the three, only the interfaces of the FileMaker Pro versions matched, and only FileMaker transferred files without problems in either direction. The beta version of Canvas Windows we saw will not be released until this spring, and even then its interface will differ from Canvas Mac until the next major Canvas Mac release.

And although the Windows version of XPress is shipping, users must wait for the release of QuarkXPress 3.2 on the Mac later this quarter before they can share files from an IBM PC or compatible to a Mac.

Font failures. We experienced some problems transferring graphics between the Mac and Windows. PICT files must be translated before they work in Windows. And Encapsulated PostScript files must be saved in their native program with a PC preview, and even then they come over in black and white.

All our reviewers, without exception, had tales of woe concerning font incompatibility. Most font problems involved not having the same fonts or having the same fonts with different names on both platforms.

We also found that because a Mac and a Windows font has the same name doesn't necessarily mean its metrics are identical on both platforms, as is the case with Adobe Systems Inc.'s Futura family, for example.

These problems are magnified

when the file you are transferring is built on precise typography, as is often the case with files created with page-layout or illustration programs.

When a font's metrics don't match on both platforms or, worse, when you have to substitute a font, you lose hard-won, critical formatting. And when you transfer our reviewers' experiences to the hustle and bustle of deadline-strapped offices, the problem is thrown into

sharper focus: How much damage control can you afford to make before it's quicker and cheaper to create the file from scratch?

Many of the programs with Mac and Windows versions bear a striking resemblance to one another, and some are functionally identical. But true interoperability demands the hassle-free transfer of complex graphics files, and that's a race that's yet to be won. □



FileMaker passes interop test

By Steve Michel

If you are familiar with Claris Corp.'s FileMaker Pro on the Mac, then FileMaker Pro 2.0 for Windows will give you no pause. Only a few features that are operating system-specific, such as support for Apple events and publish and subscribe, are available in the Mac version but not the Windows version. We can think of no functions of the Windows version that are not available on the Mac version.

FileMaker and Windows.

There has long been more compatibility in the database arena than in others such as word processing; programs such as Blyth Software Inc.'s Omnis and Microsoft Corp.'s FoxBASE have long offered cross-platform compatibility. These products let you move both your data and code and even offer multi-user access between platforms.

FileMaker Pro for Windows does not support two common Windows 3.1 elements: OLE (Object Linking and Embedding) and Dynamic Link Library (DLL) files. These are powerful Windows functions that would no doubt benefit FileMaker Pro users. OLE allows programs to embed unusual types of files as objects into their data. You can use OLE to add animation to Microsoft Excel, for example. DLL files add functions to programs, much like HyperCard external commands (XCMDs).

A nice touch is the way the Windows program lets you use either standard-Mac or Windows keyboard shortcuts.

Interoperability. No translation is required to move FileMaker Windows and FileMaker Mac files from one machine to another. This can be accomplished from the Macintosh by saving a FileMaker Pro file to an IBM PC or compatible disk —

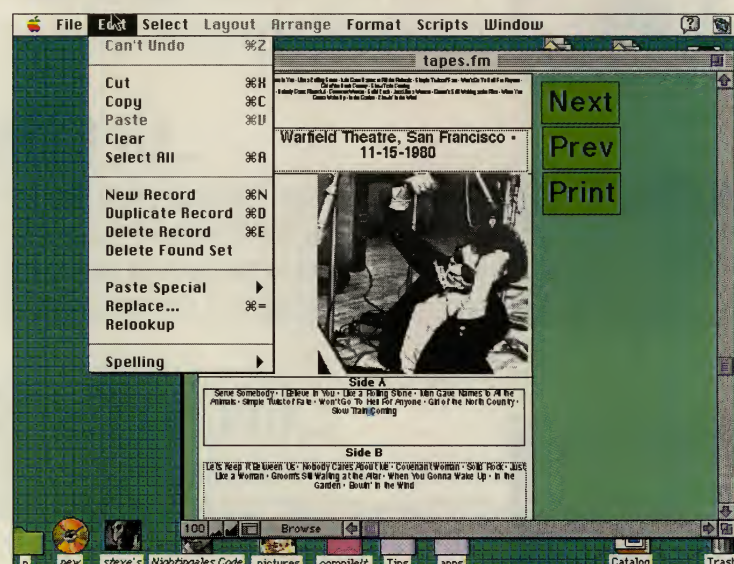
using Apple File Exchange, Insignia Solutions Inc.'s AccessPC or Dayna Communications Inc.'s DOS Mounter — or by moving the file to a shared server.

When transferring files via floppy disk, users must follow DOS file-naming conventions for consistent results in Windows. Over a network, however, FileMaker for Windows can recognize long Mac names.

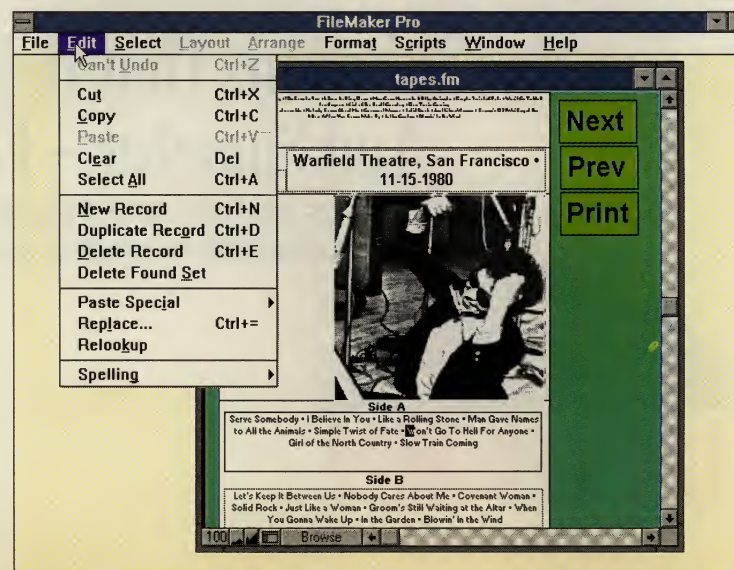
Sites with Macs and PCs con-

nected on an AppleTalk network (using Farallon Computing Inc.'s PhoneNET PC software) can use FileMaker Pro's client-server architecture to allow simultaneous access to files. Sharing files in this manner works like sharing them between Macs. Windows-only sites can share files if they are using Novell Inc.'s networking software. FileMaker Pro does not yet support

See FileMaker, next page



These screens show the same file open simultaneously on both a Mac (top) and an IBM PC compatible. A FileMaker Pro for Windows preference lets you specify the use of standard Mac keyboard shortcuts instead of Windows keyboard shortcuts, as shown in the Edit menu.



Canvas opening new Windows

Deneba has stretched Canvas for Windows, but it's not quite a perfect fit.

By Philip Bishop

When Deneba Software releases Canvas for Windows this spring, it won't usher in a world of seamless interoperability between it and its Macintosh counterpart, but it will march a long way toward it.

The Beta 5 release of Canvas Windows we tested was predictably buggy — the Dimensioning tool drew incomplete lines, for example, and the program crashed several times. However, it enabled us to catch a glimpse of Canvas' future, and we generally liked what we saw.

Windows additions. Canvas has endeared itself to users in part because of its extensible architecture, which allows users to add new com-

ponents by simply dragging an extension into a folder. On the other end, some parts of the program's interface are muddled and confusing. Deneba has attempted to address this clutter in Canvas Windows. This is strikingly evident in the program's efficient handling of color.

Assigning color in Canvas 3 can take you on a journey through several dialog boxes. By contrast, in Canvas Windows a single dialog box, the Color Manager, lets you select RGB (red, green, blue), CMYK (cyan, magenta, yellow, black), HSL (hue, saturation, lightness) and Pantone colors, as well as create RGB, CMYK and HSL blends. The new Complimentary

Color will substitute a selected color with its opposite color in the Color Wheel. This makes it easy to use colors with maximum contrast.

Other useful changes in Canvas Windows include a magnifying tool that lets you reduce or enlarge a specified area by dragging a box around it. And macros — Canvas' object libraries — now update automatically when images are changed.

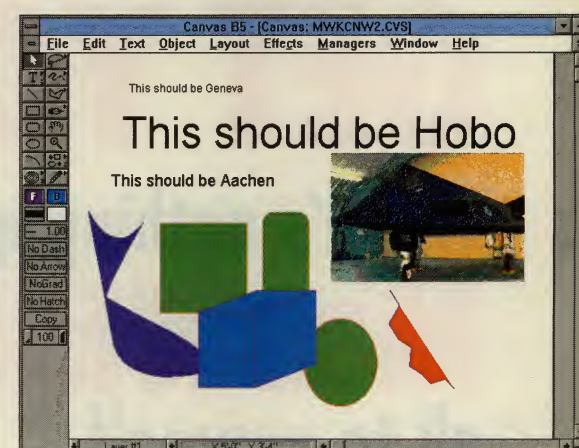
It was interesting to note that some of the items found in Deneba's recently released \$49.95 ToolPAKs add-ons for Canvas 3 (see MacWEEK, Jan. 4), are core features in Canvas Windows. For example, the Envelope function, available to Mac users as part of the Design ToolPAK, is available under the Effects menu in Canvas Windows.

While these changes are likely to be helpful in the long haul, until the next major release on the Mac, cross-platform users will have to get used to both new features and new locations for familiar features. Deneba said that when Canvas Windows is released it will publish a maintenance release of Canvas 3 for the Macintosh to smooth bumps that users might encounter in the transition period. The company says it is working toward the day when the two versions of Canvas will virtually mirror one another.

Interoperability testing. A key component of interoperability is file transfer. To test this with Canvas and Canvas Windows we designed a test file in each program that contained three lines of text set in three different typefaces and styles, simple geometric shapes (which included patterns and colors), Bezier curves, and an eight-bit color TIFF photo. We worked on a Quadra 900 with 8 Mbytes of RAM running Canvas 3.0.6 with the Design, Utility and Imaging ToolPAKs installed. We used a Tandy Sensation 486SX with 4 Mbytes of RAM running a Canvas Windows Beta Version 5.

For the IBM PC and compatible-to-Mac transfer, we mounted the disk on our Quadra desktop using Insignia Solutions Inc.'s AccessPC, but we were unable to open the test file directly from the disk. However, after running the file through Apple File Exchange, using the default translation mode, the file opened successfully. All the components in the file transferred faithfully except the typefaces.

Transferring the file from the Mac to the PC initially gave us a great deal more trouble. The program kept informing us that the file we were attempting to import was not a Windows bit map. But once we ran the file through Apple File Exchange, the transfer was almost a complete success — even the photo made it across. Only the fonts,



which weren't identical on both systems, didn't translate.

Font fix. A perennial problem of cross-platform file transfer, as evidenced by our tests, is type incompatibility: The typeface you used on your Mac is not installed or is unavailable on your PC or vice versa. An obvious way of dealing with this is to install the same fonts on both platforms.

While it wasn't available in our beta version, Deneba has another solution, which it says it intends to implement in Canvas Windows. This will be the inclusion of a dialog box that pops up when you open a file with incompatible fonts. The dialog box will let you choose a font installed on your PC as a substitute, and perhaps even display representations of all your installed fonts so you can make a better match.

Conclusions. Canvas Windows shows all the teething troubles of any early beta program, but it also shows much promise. We particularly liked the centralized color handling, the incorporation of ToolPAK components into the core program and the generally improved interface. And being able to transfer files back and forth between the Mac and a PC — the litmus test for interoperability — not only opens a window of opportunity for Deneba to greatly expand Canvas' following but also draws new horizons for Macintosh Canvas users.

Deneba Software is at 7400 S.W. 87th Ave., Miami, Fla. 33173. Phone (305) 596-5644; fax (305) 273-9069. □

FileMaker *From previous page*

Windows for Workgroups or other networking schemes.

Interestingly, we had some troubles when exchanging pictures and sounds using the latest version, 3.0, of PhoneNET PC. We often encountered memory errors on the Windows machine, which have led to system freezes and lost data. Claris said it is addressing this problem in Version 2.0v2 of the Windows program, which will ship soon.

We have seen some cases where character spacing is different between the two machines. Sometimes text wraps differently on the Windows machine than it does on the Mac, which is not unusual in cross-platform applications.

Pictures and sounds. Pictures in a Mac FileMaker Pro file show up fine in a PC file without extra steps. However, in FileMaker for Windows you must set a preference to specify that a Macintosh bit map of a picture is stored in addition to a Windows version, which increases the size of the file. If you don't set this preference before you place graphics into a file, fields containing Windows graphics show as blank on the Mac.

We have used FileMaker databases to store both Windows (.WAV) sounds and Mac sounds and played both sounds on either platform.

FileMaker's capability to contain pictures and sounds that can be viewed or played on either machine makes it an interesting tool for cross-platform conversion. Sounds can be copied from a FileMaker field on either machine and pasted into another application, as can bit maps.

Claris has said that FileMaker Pro for Windows will take advantage of QuickTime for Windows so that users can include QuickTime movies in Picture/Sound fields. Using the Apple QuickTime for Windows developers kit, we were unsuccessful doing this, however, and Claris technical support was of no help. Claris is not currently distributing QuickTime for Windows with the package, and Apple has not made it available as a consumer product, so this is a minor point at this time.

The documentation for FileMaker Pro for Windows includes a brief but useful appendix about the problems of cross-platform use. While it tells you what the problems are, it sometimes doesn't do a good job of telling you how to solve them. For example, it says that colors in pictures often can be distorted, depending on the colors used in the pictures and the capabilities of the two machines, but it doesn't tell you how to solve this problem.

Conclusions. FileMaker Pro 2.0 for Windows is one of the most compatible cross-platform applications we have seen; it offers direct binary compatibility between the Mac and the PC as well as cross-platform multi-user support in the right circumstances. It will be a must for mixed shops, but we are less sure about the inroads it might make into the Windows-only market. We suspect that Windows users would like support for OLE to be included with the program.

Claris Corp. is at 5201 Patrick Henry Drive, Box 58168, Santa Clara, Calif. 95052. Phone (408) 727-8227. □

To test file transfer between Canvas 3.0.6 and a beta version of Canvas Windows, we created the Mac file (top) and ran it through Apple File Exchange using the default translation mode. The file then opened successfully on our 486SX PC (bottom). Only the typefaces, which weren't available on our PC, failed to transfer. The PC-to-Mac transfer was similarly successful.

XPress for Windows transfers files well one way

By Kurt Carlson

The release of QuarkXPress for Windows has upped the ante in desktop publishing on that platform and promises to extend the functionality of the Mac's powerful page-assembly standard soon. Until the release of QuarkXPress 3.2 for the Macintosh, due this

quarter, XPress for Windows files will not translate to the Mac, so we were unable to test interoperability in this direction. We did test file transfer from the Mac to Windows, however, and were impressed by the results.

The XPress for Windows interface isn't as elegant as its Mac counterpart's, but that

shouldn't surprise anyone. The only real differences between the Mac and Windows versions of the program are its Command-key assignments and the file formats they can import and export. The Windows version adds support for bit-map, Corel Draw, Draw Perfect, GIF (Graphic Interchange Format),

Word Meta File, HP-GL and PCX graphics formats plus RTF text format.

XPress for Windows also supports Microsoft Corp.'s OLE (Object Linking and Embedding), whereas the Mac version supports Apple's publish and subscribe.

To test interoperability, we created a file on the Mac that contained TrueType and Type 1 fonts; manual kerning; kerning tables; master pages; guides; style sheets; drop caps; custom colors; automatic and manual text wraps; rules; borders; and files in Encapsulated PostScript, TIFF and PICT formats.

The XPress for Mac files required no modification before they could be opened on Windows. The graphics files required some minor manipulation. We copied the files to DOS-formatted disks using Insignia Solutions Inc.'s AccessPC. Most elements transferred well, including preference settings, paragraph and character formats, H&J settings, colors, and trapping information.

The few elements that didn't make it to Windows are mentioned in the manual. These included libraries; bit-map frames created on the Mac in the Frame Editor program; Mac EPS previews (files saved with PC previews in Adobe Illustrator lose color information); and some PICT files (saving a PICT file from Adobe Photoshop seemed to fix this). This is a small list considering the scope of styling possibilities in an XPress file.

We had more problems with Windows than XPress itself. Fonts blocked us on several counts. We generally had no problems using Mac and IBM PC and compatible versions of fonts from the same manufacturer, but certain font families, such as Adobe Systems Inc.'s Futura, did not transfer. We attempted to make our own PC versions of some fonts using Altsys Corp.'s Metamorphosis but weren't able to create proper representations — the font shapes looked good, but the metrics differed between versions and caused copy to reflow.

The fi and fl ligatures, two typographic characters available on the Mac, are not available in Windows font character sets. XPress solves this problem by automatically converting these characters back to “fi” and “fl” if you have the Ligatures Preference turned on.

QuarkXPress for Windows promises to employ all the power of its Mac relative. Quark Inc. is committed to supporting the product, and several vendors already have begun shipping Windows-compatible QuarkXTensions. Until the release of XPress for the Mac 3.2, however, the verdict must wait on Quark's seamless cross-platform compatibility attempt.

Quark Inc. is at 1800 Grant St., Denver, Colo. 80203. Phone (303) 894-8888; fax (303) 894-3399. □

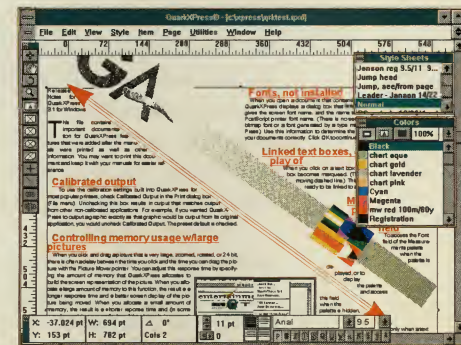
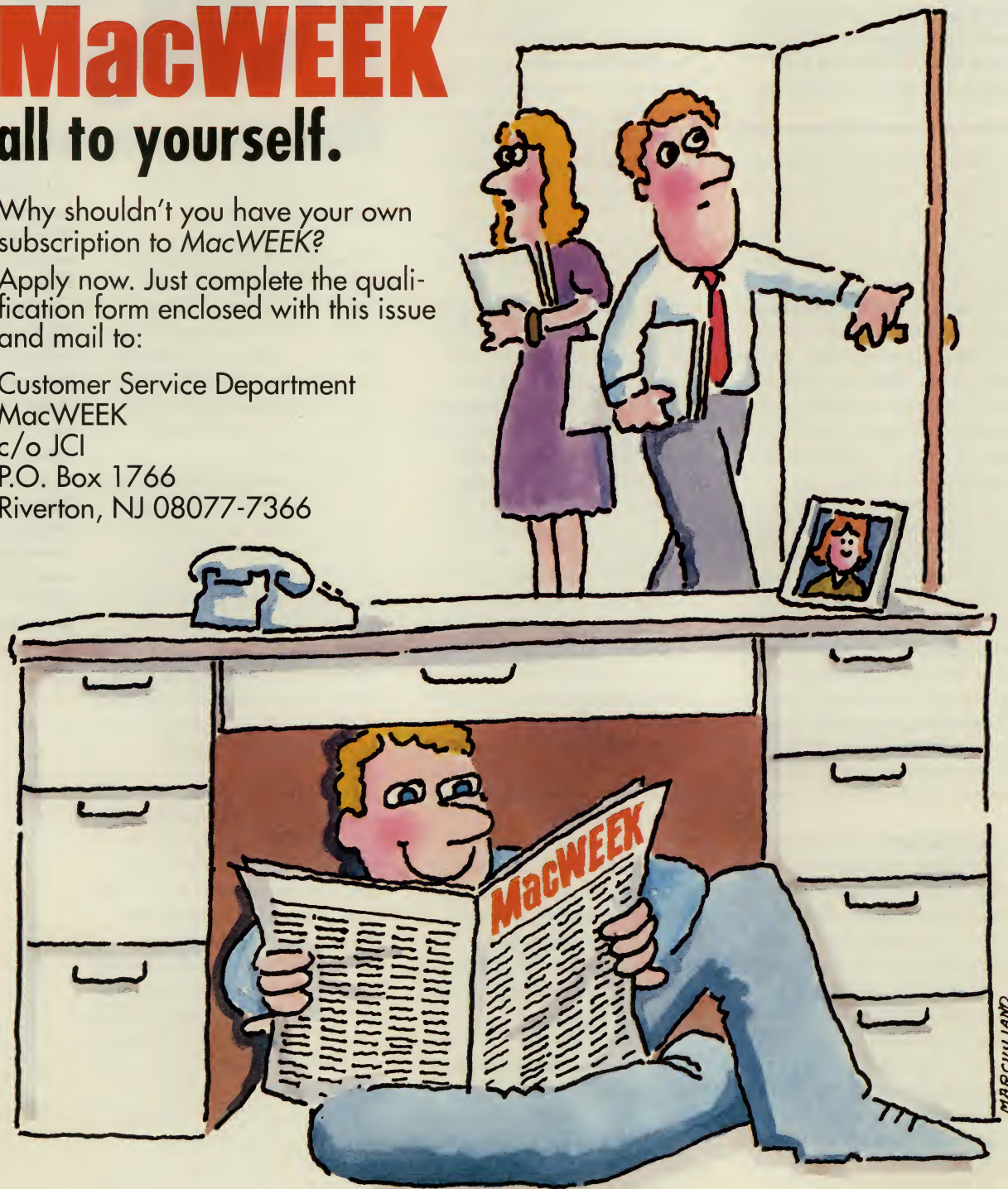
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This Mac file required no translation before we opened it in XPress for Windows. Only the monochrome GA icon has been updated to show its Windows preview.

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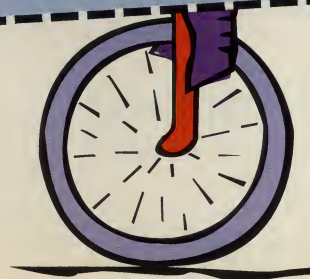
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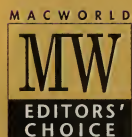
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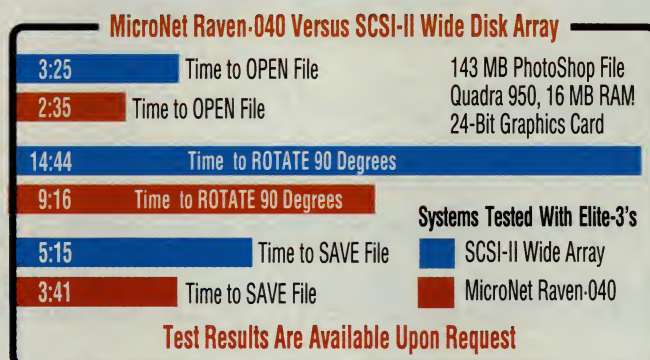
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Reviews

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► Network Management System.
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Version 2.0 stays In Control

Attain adds automatic reminders, more flexible printing, a script feature and document linking to its premier to-do list manager.

By Dale Coleman

If you manage to attain your goals, you probably keep to-do lists of some kind. One way to do so is to use a tool that actually encourages list keeping. In Control from Attain Corp. helps you gain command of your lists by letting you view your data in a hybrid outline and spreadsheetlike table format. The result is a powerful tool that aids the doing as well as the listing.

In our review of Version 1.0 (see MacWEEK, Feb. 17, 1992), our wish list for the next version included a limited scripting facility to automate repetitive tasks and quick access to related documents via Apple events. With In Control 2.0, Attain Corp. has fulfilled these wishes, as well as some we hadn't thought of, while simultaneously retaining most of the program's ease of use.

The list price for In Control 2.0 is \$129.95. This includes Portfolio Systems Inc.'s DynoPage Lite. Upgrades from Version 1.0 are \$30, unless you purchased the product after Nov. 1, 1992, in which case the upgrade is \$10.

In Control's suggested memory size has increased from 512 Kbytes to a still-miserly 800 Kbytes.

Topics. Anyone familiar with a standard Mac outliner, such as Symmetry Corp.'s Acta Advantage or Symantec Corp.'s MORE, will recognize immediately one facet of an In Control document: Each row is called a Topic, and you can indent, collapse and move Topics with standard outliner techniques. But unlike most outliners, In Control Topics can be divided into several cells; two or more Topics result in spreadsheetlike columns.

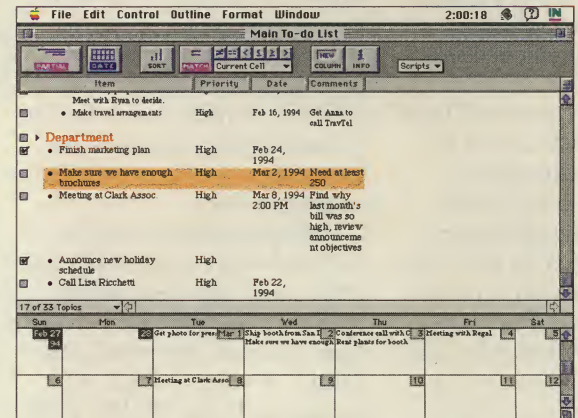
In Control lets you assign column labels, such as Priority, Date, Key Individual and other categories that may be pertinent to your tasks. Columns can be sorted, expanded, moved or hidden. You also can match records based on the contents of any cell.

This scheme lets you view a to-do list in many ways. You might want to see only those items that are assigned a high priority, those items tied to a specific date or both. You can view a list in either outline or spreadsheetlike table view with a click of a button in the horizontal tool bar, which is inaptly named the Control Panel.

Good stuff. Some of In Control's new features are very simple. You can optionally display a check box to the left of each Topic, which you can check when that task is completed. You can hide or display checked Topics with a menu command.

The new Link command uses Apple events to let you associate any file or application to a Topic. Links are indicated by a special symbol in the Topic's check box. This feature is very well-implemented and vastly expands the role In Control can play in your work environment. If you're working on a large project with many associated documents, In Control can function as a home base you can use to manage all of that project's associated files.

New Reminders provide automatic notification of a scheduled Topic on a to-do list in a fairly standard manner. You can have In Con-



The new Date View option expands the main window with a calendar that displays all topics containing an entry in a date-time field. Clicking in the Date View portion of the window selects that topic in the List View portion.

trol sound an alarm at a specified time prior to the scheduled event. If you install the optional system-extension file, Blinker, it will notify you of a scheduled topic even if the file or the application is not open; if the Mac is turned off when the reminder is scheduled to be triggered, it will notify you when you next start up.

The Reminder dialog box gives you several options to respond: postpone for one day, postpone for five minutes, reschedule for another time or check the topic as completed.

You'll have to remember two things about Reminder files: First,

if you use more than one In Control file and the file is not open when the reminder is activated, you'll have to remember the name of the file with which the alarm is associated. The In Control icon blinks alternately with the Apple menu icon, but there is no indication of the name or location of the file requesting your attention. Second, the reminder data is stored in a file in the Preferences folder in the System folder, so if you plan to use the same group of reminders on two or more machines, you'll have to remember

See In Control, next page

score card

In Control

Attain Corp.

Version tested: 2.0

List price: \$129.95*

Overall value ♦♦♦♦

In Control remains the premier to-do list manager for the Mac. Version 2.0 expands on the original version's features because of the addition of automatic reminders, more flexible printing with the inclusion of DynoPage Lite, check boxes that can be used to mark completed items on the list, a script feature for automating repetitive tasks, document linking via Apple events, preferences and a Day View calendar that can help you further manage scheduled list items. Version 2.0 retains most of the original version's clean and intuitive interface, but the implementations of some new features, including the Day View calendar, fall short of the ideal.

Performance ♦♦♦♦

Features ♦♦♦♦

Ease of Use ♦♦♦♦

Documentation/support ♦♦♦♦

* Includes Portfolio Systems Inc.'s DynoPage Lite. Upgrade from Version 1.0, \$30 (\$10 if purchased after Nov. 1, 1992).

RATINGS KEY

♦♦♦♦ Excellent
♦♦♦♦ Very good
♦♦♦ Good
♦♦ Fair
♦ Unsatisfactory

Helix Express puts twist on relational data

By Mel Male

Helix Express is a low-priced relational database application with a client-server architecture and multi-user capabilities. The program is an upgrade of Odesta Corp.'s Double Helix, which Helix Technologies Inc. of Northbrook, Ill., acquired last year, and shares an almost identical interface and many features with its predecessor.

Last year Odesta reduced the price of Double Helix from \$695 to \$439, and Helix Express 1.0 has retained this lower price.

Like Double Helix, Helix Express makes extensive use of icon-based visual programming; other major Mac relational-database applications — such as ACI US Inc.'s 4th Dimension, Microsoft Corp.'s FoxBASE+/Mac and Blyth Software Inc.'s Omnis 7 — use more conventional text-oriented programming languages.

Although Helix Express is a relational database, it is much less powerful than its more expensive competitors. Helix Technologies is marketing its product to users of flat-file databases, particularly Claris Corp.'s FileMaker Pro. For about \$50 more than FileMaker

Pro, the Helix package offers more power and flexibility because of its relational capabilities and programmability. But buyers will find Helix more difficult to use than the Claris product.

Enter the BLOBs. New to Helix Express is support for binary large object (BLOB) data types,

which allow users to store and retrieve files (including applications) from within their database applications.

Helix Express' support for BLOBs significantly adds to its value and gives it a capability not available out of the box from its competitors. Although a similar

See Helix, next page

score card

Helix Express

Helix Technologies Inc.

Overall value ♦♦♦♦

Version tested: 1.0

List price: \$439*

Helix Express contains all the basic tools needed for developing relational-database applications. Its direct support for binary large object (BLOB) data types is not offered by any other Mac database system. Although it is not as flexible, powerful or speedy as its major competitors, it provides an easily implemented, multi-user, client-server solution at a low price. It is similarly priced and more powerful than flat-file databases such as Claris Corp.'s FileMaker Pro, although it is not as easy to use. Relational databases inherently tend to be complex; with Helix Express the complexity is transferred from a written programming language to an icon-oriented visual interface.

Performance ♦♦♦

Features ♦♦♦

Ease of use ♦♦♦♦

Documentation/support ♦♦♦♦

* Upgrades from Double Helix, \$129. Runtime version, \$125. Client packages (per client): one to three clients, \$199; four to seven clients, \$175; eight to 11 clients, \$150; 12 or more clients, \$135; developers price, \$125. Client upgrades, \$99.

Helix

From previous page

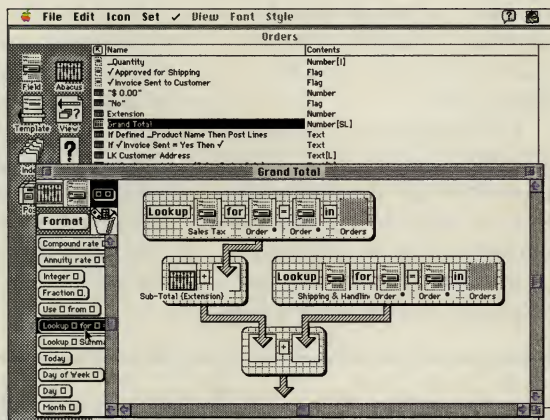
BLOB capability previously was available in the Helix family's Odesta Document Management System (ODMS), that application was not nearly as affordable as Helix, nor was it readily available commercially.

Helix Express retains the "Document" name ODMS used for the BLOB data type, although anything on the Mac desktop except folders — including applications, code segments, text files, PICT files and QuickTime movies — can be stored and retrieved. You can display a stored item's icon, name and Finder information (size, creator, type, creation date) using Helix's data displays; with the exception of PICT files, however, you cannot view the contents of a document directly. Instead, to view or update a stored document from within Helix, you double-click on its icon

just as though it were in the Finder. Provided the application used to create that file is available, Helix Express will copy the file from the database record's Document field to the client computer, launch its creator application and open the document. When you finish reviewing or updating the document and are ready to close the file, you can save the results back into the database, to a file on the client computer or both.

Only one application may be sublaunched at a time and only one Helix-stored document may be open at a time. However, users can open documents not stored in the database by using a sublaunched application. Unlike ODMS, which gave a database the option of either internal or external document storage, Helix Express supports only internal document storage, which means database sizes can grow extremely large.

Helix Express' Calculation Tiles provide a means for graphically defining calculations and other manipulations of stored data. Tiles are dragged from the reservoir at the left as needed.



In Control

From previous page

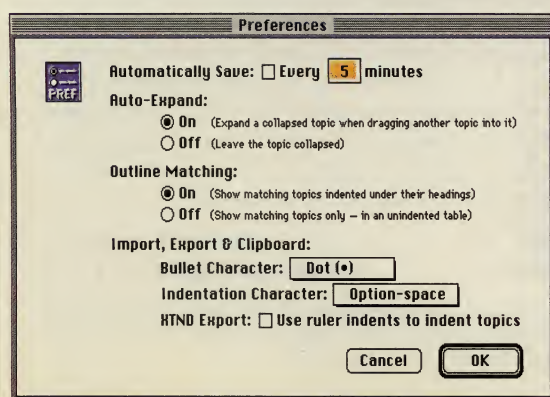
to move the Preferences file along with the In Control document.

A script is not a script. The powerful new scripting feature is at once accessible and somewhat confusing. For example, if you want to create a script that automatically displays only high-priority items sorted by date, you must first issue the commands to display the list, then issue the new script command from the pop-up menu in In Control's tool bar. This command summons the Script dialog box, which contains a field for naming the script and check boxes to further define how you want the list displayed.

These include options to expand all topics, hide or display checked topics, and hide or display Date View. In this example, you would check boxes for the current match (high-priority items) and the current sort (by date).

The terminology used in this dialog box can be confusing. The match check box is labeled "Match, using the saved Match criteria," but it means to match using the last match commands performed before returning to Whole Outline view. This, and similarly sloppy language, makes scripts more difficult to grasp than necessary.

It seems that the match and sort boxes should be checked automatically, given that the manual states a



A Preferences dialog box provides access to several new features, including an option to save automatically at a user-specified interval.

Work-flow management.

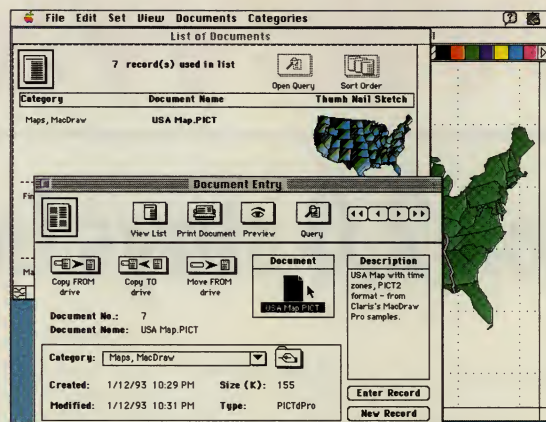
One obvious but important use for Helix's BLOB support is to simplify routine document storage and retrieval. A more sophisticated use is the creation of work-flow management systems of a type not possible using other Macintosh database systems.

For example, in a workgroup involved in magazine production, you could use Helix Express to define all planned articles and art, to assign responsibilities for their preparation, and to control and track their progress through the production process. Using BLOB data types, a typical record in such an application could contain the actual document being prepared, as well as its specifications, assignments and status. Not only can workgroup members be notified of assignments when they log onto Helix but the necessary documents also will be there, ready to work on.

Multi-user solutions.

Helix Express' client-server system provides multi-user solutions that are both easy to implement and affordable. As with Double Helix, in the multi-user mode, all users work from the same database server; dedicated file-server software such as AppleShare is not needed. Support for Apple's ADSP (AppleTalk Data Stream Protocol) has been added to improve network performance.

Instant Visit, another new feature, copies and saves key elements of a



BLOB data-type support for documents gives Helix Express unique capabilities. Double-clicking on a stored document's icon sublaunches the creator application and opens the document in its original format for review and editing.

database's structure from the server to the client workstation during the initial log-on, thereby saving time during subsequent log-ons.

Performance worries.

Despite these improvements, Helix Express' performance is not speedy in all areas. A simple search or sort on an indexed field is fast enough, but indexing, importing data and displaying records in a list format containing a calculated field can all be frustratingly slow.

Icon-based programming.

Helix Express makes extensive use of icon-based visual programming to define and access the major elements of a database's structure — files, fields, indexing, data-viewing formats, users, access privileges, sequences and data operations. Each element is represented by an icon indicative of its class and can be named, opened, closed and

duplicated according to standard Macintosh conventions.

Most intriguing are the Abacus icons, which symbolize calculation, and the Calculation Tiles they contain. Calculation Tiles are graphical representations of the operations you can perform on data. An Abacus construction for a simple calculation, such as joining two text strings, might use just one tile, while a complex operation may require many tiles chained together. When only a few tiles are needed in an Abacus, they are easy to manipulate, but building lengthy, complex procedures can be tedious.

The set of commands, functions and control statements provided via Helix's tiles is not as rich as those provided by the heavyweight databases. But for many database development needs, the Helix tiles will be sufficient. When they are not, you are out of luck; unlike the high-

See Helix, Page 58

script is like a snapshot of the current state of the document.

The calendar.

Many to-do list topics often are appointments or milestones associated with a specific date and time. The new Date View feature addresses this fact in a limited way. You access Date View by clicking the Date button in the tool bar. Date View opens a second "window" containing a calendar below the List View window. It's not really a window, since the drag box controls the entire document window, but it has separate vertical scroll bars from the List View window.

Any topic with a date entered in a date-time field appears in the Date View; items that are checked in the List View are displayed in strike-through text in the Date View.

While being able to see scheduled topics in calendar format is useful, the implementation of this feature is the least appealing thing about In Control 2.0. The Date View calendar always opens displaying the current date, so if you're scheduling topics several months from now, you must use the Go to Date command. The first topic listed on a day usually is par-

tially hidden by the small box containing the numeral for that date. Date View gives you no indication whether you have more topics scheduled for one day than will fit in the Date View window. Date View would be significantly more useful if it had its own, fully resizable window.

The utility of both the Date View and the List View are enhanced by Portfolio's DynoPage Lite. In addition to a print preview, DynoPage Lite lets you print in various popular commercial organizer formats, including Day-Timer, Day Runner and FiloFax.

Documentation and support.

The documentation is clearly organized, but some of the topics, particularly scripts, are unclearly written. The first printing of the manual did not include an index, but Attain will send one on request. Support is a toll call and is available during normal business hours.

Conclusions. For straight-to-do list management, In Control is still our product of choice. When we evaluated the initial version early last year, we were favorably impressed by both the innovation

In Control embodies and the accessibility of its interface.

With this new version we're still impressed with the innovation. Some of the new features, especially linking, radically expand the program's usefulness. The script feature is a powerful and welcome addition, although both the documentation and the script dialog boxes can be confusing. The Date View feature adds new functionality, but its clumsy implementation will probably keep us from using it very often. Even given these considerations, we recommend In Control 2.0 as the product of choice for general list management.

Attain Corp. is at 48 Grove St., Somerville, Mass. 02144. Phone (617) 776-1110; fax (617) 776-1626. □

SYSTEM 7 COMPATIBILITY

In Control 2.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

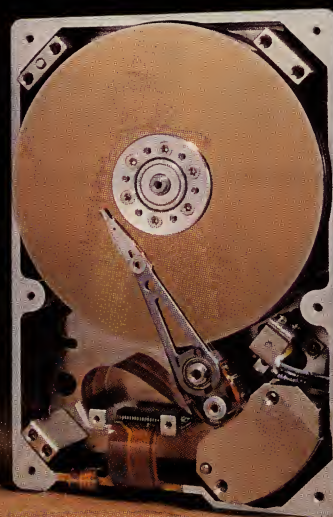
*According to vendor.

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Helix

From Page 56

end databases, Helix Express does not support pre-programmed extensions.

While Helix Express' visual approach has many staunch supporters, others have found it frustrating and limiting — you avoid the syntax problems of conventional programming languages, but you still must refer to the manual to understand what can be plugged into what for each of the more than 100 kinds of icons.

Troubleshooting in Helix's icon-oriented world can be difficult. Because graphics tend to consume more physical screen space than equivalent text procedures, you have only a limited on-screen view of an Abacus arrangement of tiles. And even though you often need to nest one Abacus within another (analogous to one procedure calling up other procedures), you cannot open the nested Abacus-es to check their construction from within a containing Abacus. Still another handicap in

locating errors is that a debugger is not provided with Helix Express.

Compliance with guidelines. Helix Express does a good job of complying with Mac user-interface guidelines. You can open, close and duplicate windows and icons in Mac style. You can edit text in the usual way, and the Helix desktop operates in a manner similar to that of the Mac desktop. New in Helix Express is the capability to customize the appearance of win-

dows with optional scroll bars, grow boxes and title bars; a variety of window borders; and, if you wish, invisible windows. Still lacking is internal support for color when designing. Menu keyboard equivalents have been added and enhanced to conform to Mac standards.

Documentation and support. The documentation comes in three parts: a comprehensive, well-indexed Helix Express Reference manual provided in loose-leaf format; a loose-leaf manual containing the Helix Express Grand Tour, which is an excellent tutorial, and Helix Express Solutions, a user guide for the four ready-to-use, modifiable applications included (a contact manager, a document manager, a business manager and a recipe database); and a third manual containing instructions for installation, getting started and Helix Express' utilities. Since the on-line Helix Help tends to be brief and Helix Express does not support balloon help, you will need to keep the Reference manual at hand.

Helix users receive free lifetime technical support via phone and fax. Training seminars also are available. In addition, Helix Technologies offers programs and support services for developers, consultants and value-added resellers.

Client pricing. Included in the package are the development environment, server software and limited client software (for testing purposes only). Full-capability client packages cost between \$125 and \$199 each, depending on the quantity ordered. Existing owners of any version of Helix can upgrade to Helix Express for \$129. Client upgrades cost \$99; runtime versions cost \$125 each.

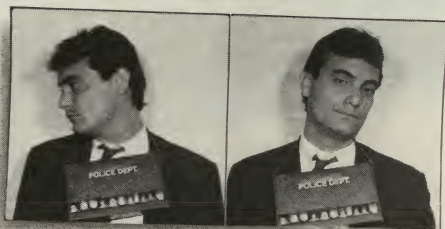
Hardware requirements. Helix Express is designed to run on all Mac models, starting with the Mac Plus, with a minimum of 1 Mbyte of allocated RAM (2 Mbytes is recommended), a hard disk and System 6.0.5 or later.

Conclusions. Whether a novice or seasoned developer, if you are in the market for a database application, Helix Express is worthy of your consideration. In general, it is not as flexible, powerful or speedy as its major relational-database competitors. But it offers an easily implemented, multi-user, client-server solution at a lower price, and it provides some valuable features, such as BLOB support, that other leading Mac databases are lacking.

These features and the price make Helix Express a notably stronger competitor for FileMaker Pro, although few will find it as easy or intuitive to use.

Helix Technologies Inc. is at 4100 Commercial Ave., Northbrook, Ill. 60062. Phone (708) 205-1669 or (800) 364-4359; fax (708) 281-7091. □

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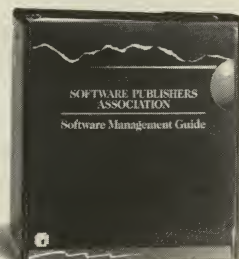
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SYSTEM 7 COMPATIBILITY

Helix Express 1.0

Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

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Appealing WordPerfect Works stumbles over the basics

Integrated product has a bright future, but we recommend waiting for an upgrade.

By Dale Coleman

Last October WordPerfect Corp. purchased BeagleWorks 1.0.1. from Beagle Bros. Inc. After several months of debugging and repackaging, it released the product as WordPerfect Works 1.2. Of the four major integrated products available on the Mac, WordPerfect Works 1.2 is at once the most ambitious and the most demanding of the lot.

Each module in the \$249 WordPerfect Works offers features you won't find in any of the competing products — ClarisWorks from Claris Corp. (see MacWEEK, Dec. 3, 1991), GreatWorks from Symantec Corp. (see MacWEEK, April 13, 1992) and Microsoft Works from Microsoft Corp. (see MacWEEK, Jan. 16, 1992). However, the most distinguishing aspect of WordPerfect Works is in-context editing of frame contents, which are really publish and subscribe editions.

In-context editing. With in-context editing, you can create complex documents with different kinds of elements. For example, a word processing document can contain a drawing element. When the graphic element is active, the menu and tool bar change accordingly. WordPerfect Works includes quick-publish and quick-subscribe features that help to smooth over publish and subscribe's inherent clumsiness. These and other features help to make this the easiest-to-use implementation of this technology we've seen. System 6 users also can use this feature within WordPerfect Works documents.

There are several advantages to this approach to in-context editing. Several documents can share the same edition, and all of them can be updated automatically when that edition is changed. Also, WordPerfect Works editions can be shared with documents created in other applications. But this level of flexibility demands some compromises, particularly in the level of performance. Creating a frame requires several steps and gives you enough time (especially on LC-class and slower Macs) to contemplate the growing sophistication of desktop computing.

The only other product offering comparable flexibility in mixing kinds of elements in a single document is ClarisWorks. It offers in-context editing of each frame but does not create editions, so the contents of the frame are not linked in any way to other documents. The benefit of this

scheme is more acceptable performance, even on 68000-based Macs.

Individual modules. Regardless of the level of integration you need or demand from an integrated package, your final decision may well hinge on the presence of one or two features. (But we think that judging a program solely on features, without consideration of performance, is shortsighted.) Each of the WordPerfect Works modules contains features that you won't find elsewhere, but each module also may lack something you need.

The word processor, which is "home base" for the majority of integrated software users, includes document sections, multiple columns, mail merge and a batch spelling checker. You can extract user-defined styles easily from another WordPerfect Works document. The module also gives you both horizontal and vertical rulers, but it lacks the capability to create footnotes and endnotes, and tabs are handled in a strange manner.

Dayna's network system has good vital signs

By Stephen Howard

Wide-ranging networking and utility vendor Dayna Communications Inc. has bolstered the usual blend of network-management tools with hardware to come up with its Network Management System. Combining two kinds of monitoring software and a stand-alone statistics-generating device, Dayna's \$1,199 bundle watches the network and its key devices so you, the network manager, can stay one step ahead of the game.

We took Dayna's system to Ziff-Davis Labs in Foster City, Calif., to test the reliability and flexibility of the company's monitoring gear. Our results indicate that the package does exactly what it's supposed to.

Staking a claim. Dayna's Network Management System includes the Network Vital Signs (NVS) application, a NetScope Probe device and NetScope Console software. NVS is the real brains of the package,

Contributors

Sridhar Palacherla was the project leader and Michal Mathog was the technical specialist who worked on this review at ZD Labs.



WordPerfect Works' in-context editing uses publish and subscribe. The masthead in this word processing document is a published drawing document. Double-clicking the masthead actually opens the drawing module. Note the scroll bars around the masthead.

Instead of dragging your chosen tab icon to a ruler location, you click the tab (which gives no indication that it has been selected), then click on the desired location on the ruler.

The spreadsheet and charting module includes most of the basics, although it has fewer functions (64) than other products. We appreciated the capability to edit a cell's contents in the cell or in the Entry bar. Rows can have varying heights. The Sum function tool is quite slick and should be a standard feature in all spreadsheets. Cell notes, a feature found elsewhere in this product category only in Microsoft Works, add significant utility to the spreadsheet. Unfortunately, the cell-note implementation is less than ideal. You can enter only 256 characters in a note, and the program gives you no indication when

you've exceeded this limit. The Note window size is fixed, and it contains no scroll bar.

The database includes picture and memo fields in addition to the usual text, number, date, time and computation fields. The same live-editing feature in the spreadsheet makes adding and changing data in the List view very convenient.

The drawing, painting and communications modules offer the basic features. Editable scripts in the communications module are superior to the macro-record facility found in competing products.

Overall impressions. There are many more innovative features in this product to admire, but several design decisions are curious at best. Some are merely annoying, others

See Works, Page 65

score card

WordPerfect Works

WordPerfect Corp.
Version tested: 1.2
List price: \$249*
Overall value ♦♦

WordPerfect Corp. purchased this product from Beagle Bros. Inc. last October and has released it as WordPerfect Works 1.2. This is an ambitious integrated application with the usual word processing, spreadsheet with charting, database manager, drawing, painting and communications modules. Its most notable feature is in-context editing, whereby you can edit document elements created by other modules. This is accomplished using publish and subscribe. Overall, the package has many powerful and useful features, but some of the basics have been left out, and its performance is glacial. WordPerfect Works needs more work before it provides users with the smooth operation and ease of use offered by some of its competition.

Performance ♦
Features ♦♦♦♦
Ease of use ♦♦♦
Documentation/support ♦♦♦**

* Upgrades from BeagleWorks, \$8 (free if purchased after Oct. 16, 1992).

** Documentation is fair, support is very good.

score card

Network Management System

Dayna Communications Inc.

Overall value ♦♦♦

Version tested: 1.0

List price: \$1,199*

Dayna's three-part package includes a hardware and software combo for monitoring network traffic and a separate application for monitoring the status of AppleTalk devices. The package's hardware lets a manager view traffic on any part of the LAN from one desktop. This traffic-tallying process works only while the console software is running, which seems like a waste of hardware. The fault-monitoring software, Network Vital Signs, is the best part of the package, with a great interface and sensible features. But the components of the Network Management System should be merged, and some extra features wouldn't hurt.

Performance ♦♦♦
Features ♦♦♦

Ease of use ♦♦♦♦
Documentation/support ♦♦

* NetScope Console and probe bundle, \$899; NetScope Probe alone, \$499; Network Vital Signs alone, \$449.

NMS

From previous page

on them back to Dayna's software running on your Mac. The boxes are 5.5 by 7.5 by 1.5 inches and are easy to install under desks or in a closet.

We tested probes on a small 15-node network of Ethernet and LocalTalk joined by a FastPath 5 router from Shiva Corp. This network was mixed platform, with six DeskPro PCs from Compaq Computer Corp. and one SPARCstation 2 from Sun Microsystems Inc. We also used the system on a larger real-world LAN.

Performance tracking. The most obvious and disappointing of the capabilities in the Network Management System are the features for recording the overall traffic levels on your various network segments. This is the realm of the NetScope Console software.

Console does what you'd expect. It records percentages of bandwidth used and errors, broadcasts per second, and the types of protocols making up the AppleTalk traffic. The device records total packets, including TCP/IP, DECnet and IPX (Internetwork Packet Exchange), but it breaks only AppleTalk into its specific protocols. You can track a particular group of devices in one segment to see what they contribute individually to the total. You can set the timing of the probe's network sampling in minutes and seconds, and you can have Console save the results to text files at different intervals. The text files are even created with Microsoft Excel's type and creator, so you can open them for analysis just by double-clicking.

The disappointment comes with the knowledge that NetScope Console captures data only from NetScope Probes and the probes report this information only so long as the NetScope Console application is running on a monitoring Mac. The software is deaf without the hardware and the hardware is mute without the software.

At \$499 each, we'd expect the probes to be able to record at least some historical traffic data. There are numerous software packages that can gather equivalent statistics

from one network segment at a time. Dayna's system adds only the capability to monitor and record multiple networks simultaneously. That's nice, but when you multiply the number of network segments on an average network times the cost of a probe — and add in a semidedicated Mac to receive all this knowledge — it becomes an expensive luxury.

Lose the dedicated Mac, and the Console and the probes conveniently let you perform only spot checks of your network traffic. The probes allow you to check the traffic on different parts of your network from one place, but is it really worth the money to avoid a trip to the network closet, where you can plug into any network you like? Also, NetScope Console doesn't provide any analytical tools to make comparisons of multiple networks more fruitful. You cannot, for example, easily compare broadcast traffic on all monitored networks simultaneously.

Fault tracking. NVS is a brighter spot in Dayna's Network Management System. NVS tallies all the devices and all the network processes running on each device for your entire network. NVS doesn't require probes but can use them if present. For each AppleTalk device or process found, you can choose from among two or more periodic tests that report back its healthiness.

NVS has two main parts: an application where you set up these monitoring functions and an extension that performs the checks and alerts you to problems. You do not need to be running the application for the monitoring to take place. Both pieces of software like their RAM in big portions; the extension requests 480 Kbytes or more (the amount increases with the number of services being monitored) and the application prefers 1.5 Mbytes.

The purpose of the NVS program is to alert you early when devices, services or network segments disappear from the LAN; when they don't respond quickly enough to queries; when routers or LAN segments experience excessive traffic; when printers run out of paper; and when

other events with various magnitudes of importance occur.

NVS works. When an event that you've defined as notable happens, the NVS extension pops up a dialog box and speaks the alert message in an echoey, digitized voice. You then have the options of turning off monitoring for that device or for all devices, viewing any notes you've entered about that device, or doing nothing and having NVS continue.

At your option, you also can have the program flash an Apple-menu icon, launch a program (under System 7 only), send a message to a pager (if you're running System 7 and have set up Ex Machina Inc.'s Notify! program previously) or trigger a macro (by simulating a keystroke to be captured by a macro utility).

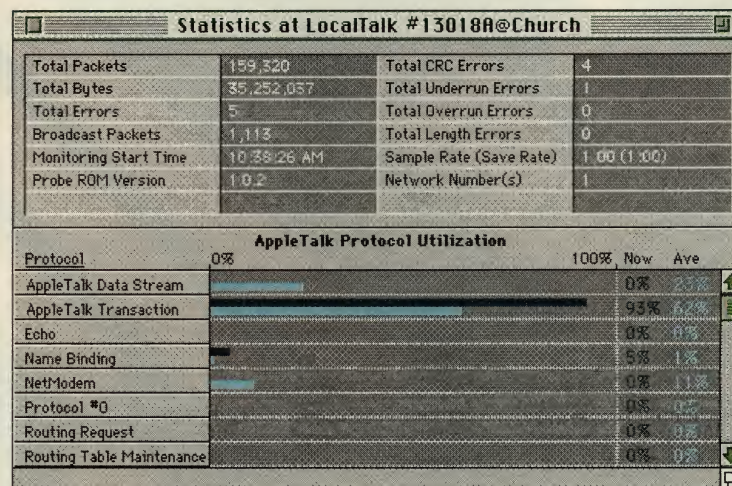
We tested every type of CPU monitor, and they all performed admirably, even when the CPUs weren't Macs. NVS didn't notice the Sun workstation on the test LAN when it was using TCP/IP protocols, but when the same machine was running uShare, AppleTalk file- and print-server software from Information Presentation Technologies Inc., then NVS saw it and monitored it. Ditto for IBM PCs and compatibles running DOS 5. When we added Farallon Computing Inc.'s PhoneNET Talk software, the AppleTalk-enabled Compaqs showed up in NVS.

The FastPath monitor is worthy of note. It can compare the packets per second in and out on the LocalTalk and Ethernet ports, as well as the total errors and collisions on each side, to user-entered values. If the router traffic exceeds the numbers you choose, NVS sends an alert. We found some of the default values rather conservative, resulting in numerous warnings. But NVS is all about finding and monitoring the thresholds of activity that are appropriate for your network, so some fine-tuning is to be expected.

However, we found that if a router was misconfigured, the NetScope probes on both connected networks crashed repeatedly. The monitors should be more robust in handling bad information coming from an improperly configured router.

For sites that don't have FastPaths, an upgrade to Version 1.1 of NVS should be available this month that offers the same router-monitoring features for Cayman Systems Inc.'s GatorBoxes and Dayna's own Pathfinders. This free upgrade also will solve NVS' one truly annoying characteristic: You must restart your Mac — thus reloading the extension — before any changes to monitoring settings take effect.

One good NVS feature becomes evident when you want to apply a



Dayna's NetScope Console software retrieves information like this from the NetScope Probe hardware that's watching the network. Each probe counts all traffic on a distant network segment and reports it back to the application running on a manager's Mac.

set of monitoring settings to several similar devices: You select the entry for the properly tweaked device, choose Copy Settings from the Edit menu, Shift-select the other devices and paste.

Problems. While Network Management System's features fulfilled the letter of Dayna's claims, we felt it fell short on achieving the spirit of early and effective monitoring.

The first problem is complexity. On a medium-size, real-world LAN with fewer than 75 nodes, NVS discovered more than 380 devices and services to track. You can drop any items from your device list manually. But better bulk-filtering capabilities — to exclude, for example, the separate entries created by every user running QuarkXPress — would make NVS more manageable. Likewise, some manual querying features would help to identify mysterious entries in the NVS device list — to discover, for instance, that the separate entries for each port of a network router all refer to the same device.

NVS' performance monitoring over time is pretty weak, telling you only the response times to queries rather than packet counts or bandwidth usage, with no options for saving historical data to disk. NetScope Console's forte is this kind of tracking, but NVS and Console don't like sharing the attentions of Dayna's probes; if NVS is monitoring total traffic on a segment through a NetScope Probe, that device is almost useless for recording traffic with Console.

Conclusions. Although we were disappointed with the lack of integration and scalability of Dayna's Network Management System, it has a couple of good core features: The probes let you monitor all the segments of your network from one location without adding a lot of traffic to your network, and the monitoring extension

runs in the background. These are useful and logical extensions to the standard behavior of network-management programs.

The package's primary competitor is the \$995 software-only NetWorks 2.0 from Caravelle Networks Corp. of Nepean, Ontario, which offers TCP/IP monitoring, scripted control over notification and electronic-mail delivery of alerts, among other enhancements (see MacWEEK, Oct. 12, 1992). NetWorks is limited to tracking about 50 devices or services. Network Management System is more robust, but its own limits will keep you from extending it too far; the program can track details of 20 routers, 20 printers and 20 NetScope Probes; performance for 20 generic devices or services; and up/down status of 100 devices. Given that Network Vital Signs, available separately for \$449, is half the price of NetWorks, anyone wanting just monitoring should consider NVS.

The user interface and basic logic of Dayna's Network Management System are very good, but the package needs some feature improvements, a manager of its parts and a lower price structure before we can say it's a very good value. For now, it'll be effective at its essential job and, for those sites where you can't plug easily into any network you like, the probes will be terrific extensions.

Dayna Communications Inc. is at 50 S. Main St., Salt Lake City, Utah 84144. Phone (801) 531-0600; fax (801) 359-9135. □

Monitors	Device	Name	Type	Zone
		Sam's Mac	APFServer	Church
		Mitch's Duo	APFServer	Church
		9M Outgoing	Retrospect Rem...	Church
		Travelling Mac	PowerBook 170	Church
		Travelling Mac	APFServer	Church
		Erik Holsinger	FM Pro 2.0	Church
		MacWEEK Demo R...	Macintosh Ilet	Church
		Apple CD-ROM S...	APFServer	Church
		Reviews	LaserWriter	Church
		1.160	Router	---
		NetModem 2400	NetModem	Church
		RealTech Laser	LaserWriter	Church
		Churchill	LaserWriter	Church
		PlayPen	LaserWriter	Church
		ScoopScript IM...	LaserWriter	Church
		UPS Server	APFServer	Metaphysios
		Vintermute	APFServer	Metaphysios
		S. 26	Router	---
		Les Trucs	APFServer	Metaphysios

Network Vital Signs' main device list can show only the network entities being monitored, as shown here, or all the devices and services on an AppleTalk network.

SYSTEM 7 COMPATIBILITY

Network Management System

Balloon help	No
TrueType	n/a
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.



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Apple

Table with 2 columns: Product Name, Price. Apple Personal LaserWriter LS \$899, Apple Personal LaserWriter NTR 1599, Apple LaserWriter IIfx 1869, Apple LaserWriter IIg 2289, Apple LaserWriter Pro 600 2099

Digital Equipment Corp.

Table with 2 columns: Product Name, Price. DEC Laser 1152 \$1079

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GCC

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Others

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SuperMac

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RasterOps

20" Hitachi SPECIALS - CALL!

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E-Machines

Table with 2 columns: Product Name, Price. 16" E-Machines T16II \$1299, 19" E-Machines T19II 2345, DoubleColor LC Video Board 409, DoubleColor SX Video Board 369, DoubleColor LX Video Board 649, Futura SX Video Board 489, Futura MX Video Board 815, Futura LX Video Board 1029

Seiko

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Maxtor

Table with 3 columns: Product Name, Int. Price, Ext. Price. ETC DataDrive 120M \$289 \$349, ETC DataDrive 213M - New 399 459, ETC DataDrive 340M 635 689, ETC DataDrive 1200M - Panther 1379 1489

Fujitsu

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Base Configuration PowerBooks

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7 SII  Seiko Instruments CM-1445 14" Monitor Using Trinitron technology, this 14-inch RGB monitor is over a \$1000 cheaper than Apple! \$479**	8 SONY 1604 16-inch Trinitron Monitor Using the Trinitron tube, the SONY 1604 offers a razor sharp image at a great price. \$1125**	9 	10 ETC DataDrive 128R Magneto-Optical Drive Featuring a Teac 128MB M-O Drive, the 128R comes complete with one cartridge! \$1,099**	11 PowerBook Batteries That Last 25% Longer New, from BTI, these batteries for the 1401/170 have a built-in cover so they won't short. \$79**	12 4MB x 8 70nsec SIMM  \$135	
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21 SONY 14-inch Monitor The creator of the Trinitron tube, Sony's 14-inch monitor is the standard by which all others are judged. \$659** #1430	22 DAYSTAR DIGITAL 50MHz PowerCache with Math Coprocessor Drop one of these in your Macintosh and race past everyone else. New Low Price! \$859**	23  QMS 860 HammerHead 11x17 LaserWriter Provides PostScript output on tabloid size paper at an amazing 8 pages per minute. \$4,199**	24 radius Radius Rocket 33 33MHz Accelerator When run with RocketShare, this accelerator is like having a 2nd Mac on your desk. \$1,999**	25 UMAX UMAX UC-630 600 dpi Color Scanner The mainstay for most desktop publishers, this color scanner is easy-to-use! \$1,149**	27 Kodak Diconix M150 Printer  \$199	
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		33 Fujitsu Fujitsu 520MB Internal Hard Disk One of the fastest drives on the market. External model is only \$1039. \$999**		34 Quantum 85MB Internal Hard Disk From Quantum From the new ELS family, this economical drive is our best seller. External for \$299. \$239**		35 80MB External Drive With Apple Drive Mech  \$249

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Works

From Page 60

are infuriating. In the former category, there's a keyboard equivalent for spell checking a selection, but not one for spell checking a document. The integration between modules is hampered because the spelling checker is available only in the word processing module, while the thesaurus is available in all modules except communications. We think more users will need to spell check a presentation created in the drawing module than will need to create complex documents with live links.

WordPerfect Works employs a virtual-memory scheme that enables it to work in small memory environments. The minimum allocation is 900 Kbytes; the preferred, 1,500 Kbytes. Performance improves if you turn this feature off. We also noticed that the program was more stable when we gave it a larger partition.

WordPerfect told us it fixed more than 250 bugs in WordPerfect Works and added support for XTND translators for common WordPerfect word processing documents before this release. We evaluated the original Beagle Bros. version of this product, and we're inclined to accept that many bugs are fixed. But this product still needs work. It is the most system extension-sensitive product we've encountered in a very long time. The painting module is particularly susceptible to conflicts. Our personal, conservative suite of commercial extensions caused the painting module to freeze the system almost on the first brush stroke. A wide variety of general productivity software, including occasional beta versions of unreleased products, has crossed our desks over the years, but we've rarely experienced conflicts as dramatic as those we found with WordPerfect Works.

In frustration, we turned off all extensions and things improved substantially, but we still had results that were far from acceptable. We experimented by using Find and Replace to replace every occurrence of a word in a two-page outline using tabs for indentation. WordPerfect Works repeatedly completed the substitution with a different font than the original. In other word processing documents, this did not occur. Importing a 160-record tab-delimited text field caused the database module to hang the system.

WordPerfect Works frequently has problems with refreshing the screen display, leaving duplicates of portions of objects behind when you move them (as when modifying a database layout) or highlighting the wrong portion of a document when performing successive searches in a word processing document.

Documentation and support. The documentation consists of a 590-page reference manual and a simple, brief tutorial. Both the reference manual and the supplied sample files

fall short of demonstrating the potential power of the product. The manual often is short on illustrations and contains several errors. The index is substandard. The company will certainly rehabilitate the documentation in future releases, but for now, it's a source of frustration.

On the bright side, WordPerfect Corp. is well-known for its excellent support, which is available via a toll call 11 hours each weekday. WordPerfect also provides support via a 24-hour bulletin board.

Conclusions. WordPerfect Works has many appealing features that are missing from alternative products. At the same time, it stumbles over some of the basics. Its reliance on publish and subscribe for the implementation of frames strikes us as overkill for a product aimed at individuals and the education and small-business markets, although following Apple's guidelines eventually can pay handsome dividends. Under the wing of WordPerfect, this product has a

bright future, but for now we recommend waiting for a major upgrade before purchasing unless your work absolutely requires one of its unique features. If you're currently using a Beagle Bros. version, take advantage of WordPerfect's \$8 bug-fix upgrade to Version 1.2 (free if you purchased the software after Oct. 16, 1992).

WordPerfect Corp. is at 1555 N. Technology Way, Orem, Utah 84057. Phone (801) 225-5000; fax (801) 228-5077. □

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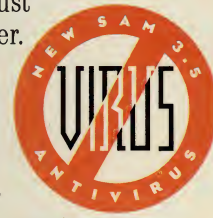
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SYMANTEC.

SYSTEM 7 COMPATIBILITY

WordPerfect Works 1.2

Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	No
32-bit addressing*	Yes

*According to vendor.

*Price in U.S. dollars. **Offer price in U.S. dollars, valid in U.S. and Canada only. SAM is a registered trademark of Symantec Corporation. In Canada, call 1-800-465-2266. Everywhere else, call 408-252-3570. † Available for volume purchasers, and with the SAM 3.5 10-pack version. Call 1-800-554-4403 for more information via FAX. Select option #2 and request document #4510. © 1992 Symantec Corporation.

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Out of memory.

OK

If you think the only way to avoid running out of memory is to avoid running a couple of your favorite applications, think again.

Think about all those memory-hogging fonts and sounds you've got stuffed into that bulging System File.

Then do what over 200,000 resourceful Mac users do every day.

Instead of closing your applications, open a Suitcase.™

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Thereby giving you the maximum amount of memory for running more applications, building bigger documents and doing other useful things.

What's more, Suitcase compresses your screen font and sound files by up to 60%.

Thereby giving you that much more precious disk space to work with.

It even lets you put your screen and printer fonts on a server for all to share.

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But whether your dividends are measured in megs or merely in Ks, Suitcase is guaranteed to save you gigabytes of aggravation.



Even if you're operating in System 7.

Because System 7 still stuffs your resources into your System File.

And System 7 still makes you close down all your applications and restart your Mac each time you install a new font.

Which is a real pain in the, uh, system.

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Each suitcase can pack up to 800 fonts, 64 DAs, and any number of FKEYs and sounds.

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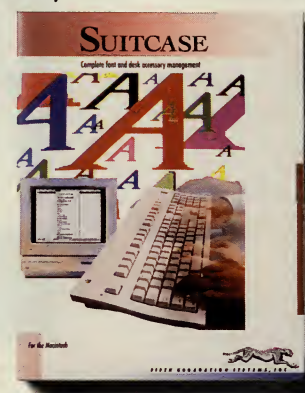
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New technologies are changing face of plotters

With more plotters on the market, selecting one takes a lot of homework these days.

By Larry Stevens

In the past, plotters could be defined as machines in which pencils or pens moved across large sheets of paper to create images generated in CAD or engineering software. Today the only part of that definition that still applies is the use of large sheets of paper.

While pen and pen/pencil plotters are still an important part of the market, a wide range of newer technologies has increased choices for Mac users. Also, new drivers are letting users harness plotters to print files created in standard drawing packages.

Vector-based plotters. Plotters can be broadly divided into two categories: vector-based and raster-based. Vector-based plotters, which include pen plotters and pen/pencil plotters, not only represent the original plotter technology, they also were the first color-output devices. Because they draw lines from endpoint to endpoint continuously, vector-plotter images are sharper and often more accurate than those created by raster-based plotters.

Vector plotters are versatile because they can print on virtually any media and in virtually any color and gray scale using a combination of (usually) eight pens or pencils. Feature for feature, vector plotters are the least expensive technology both in cost of purchase and in cost per plot.

The main disadvantage of vector plotters is that when compared with other plotter technologies, they are slow when drawing complex files.

But the slow speed didn't bother Eugene Hardwick, senior engineering specialist at 3M Co. of St. Paul, Minn. He bought Mutoh America Inc.'s XP-500 E-size plotter because "it's very easy to use, doesn't need a lot of maintenance, the plots are extremely accurate, and the price made it relatively easy to justify," he said.

One major use of Hardwick's plotter is to create manufacturing drawings. He said he chose the XP-500 because it has the capability to use pencils, which are less expensive than inks and don't bleed or require drying time, so he

can work on the printout as soon as it comes out of the plotter. Also, the pencil drawings can be erased and altered manually.

All the right moves. Vector plotters can be divided into flatbed, in which the media remains stationary and the plotter moves; and paper movers (also called drum-feed, grit-wheel or rollerbed), in which both the media and the drawing tools move.

Flatbed plotters usually are more expensive than paper movers, but they can print on a wider range of media, including tracing paper and heavy cardboard. Also, unlike paper movers, flatbed plotters don't need pinch rollers to hold the media in place, so they can print to the edges of the page.

All Mutoh plotters are paper movers, as are CalComp Inc.'s Pacesetter pen plotters, Hewlett-Packard Co.'s DraftPro and DraftMaster series, and Roland Digital Group's GRX and GSX series.

Roland Digital Group's DPX and DXY series are flatbed plotters. The company's flatbed SketchMate plotter also allows you to replace the pen with a cutting tool that can cut signs.

Raster-based plotters. All plotters other than pen plotters are raster-based, which means the plotter driver has to convert the vector data from the application to the pixel-oriented (raster-based) device.

That process normally slows the initial plot, but replots are faster. Even considering the translation time, raster plotters usually are faster than vector ones, and some raster machines also can create better gradient shades and high-quality fills.

Direct-imaging plotters.

Direct-imaging plotters are similar to thermal fax machines. They burn an image into special thermosensitive media, require very low maintenance and are moderately low in cost. But because they use special media, the cost per plot is relatively high. In addition, most direct-imaging plotters do not print in color, although a few, such as Cal-



Eugene Hardwick, senior engineering specialist at 3M, uses Mutoh America's XP-500 E-size plotter and Mac-Plot software from Microspot USA to create large PERT charts. The XP-500 is a vector plotter that can use either pens or pencils to create the final plot output.

Comp's Drawing Master series, print in two colors.

Grant Goodyear, director of sales and marketing at Parallel Geoscience Corp. in Austin, Texas, uses Atlantek Inc.'s 3600 direct-imaging plotter for printing seismic data on 24-by-36-inch paper sheets. Goodyear said he chose direct-imaging technology because the plotters are very rugged. "You don't have to add toner or ink, you don't have to worry about whether the environment is right, and you don't need any preventive maintenance," he said. "There's very little you can do to hurt the machine."

Goodyear also likes the fact that the plots can be used immediately without having to dry.

The one disadvantage Goodyear has found is that the media will eventually fade, especially if it is stored near a heat source. However, he said that doesn't bother him since he easily can create a duplicate plot.

Inkjet plotters. Inkjet plotters are fast, relatively inexpensive and have a moderate cost per plot when standard media is used. However, some manufacturers recommend using special media for optimal output results, which of course increases the cost per plot.

Louis Mackall, an architect in Guilford, Conn., said that his HP DesignJet 600 monochrome inkjet plotter has all but eliminated his need to store blueprints.

"When we were using a pen plotter, printing time was so slow, the plot was a semisacred thing," Mackall said. "After it was printed, we'd make copies of it and store it in special drawers. Now we don't need to store paper anymore, since if we need another copy, we simply print one out."

Mackall estimates that his inkjet plotter can print in 15 minutes a

plot that would take his pen plotter almost 45 minutes.

In addition to reducing storage requirements, storing drawings on a computer and printing them only when needed provides Mackall with blueprints that reflect all changes. "Blueprints are often obsolete almost as soon as they come out of the plotter," Mackall said. "Either the client or we have made a change that previously had to be hand-drawn. Now that we make all changes on the Mac, we always have an up-to-date print to work from."

Electrostatic. Electrostatic plotters, which lay toner on electrostatically charged media, represent the high end of plotters. Products such as the 68000 series from CalComp are fast and provide full color and good continuous tones.

Their main disadvantage, apart from high price, is that they require a lot of maintenance. Toner has to be added; the machine has to be cleaned and checked regularly; a low-humidity environment has to be maintained; and excess toner that the machine removes from the medium has to be disposed of as hazardous waste.

However, the facilities manager of a large manufacturing company said that his CalComp 68000 electrostatic plotter is the fastest plotter he has ever had. He uses it to print sections of the building for maintenance and repair work.

"We were using a pen plotter, and on a slow day, it'd be fine," he said. "But on a busy day, the slow speed would back up plots so that if you didn't put in your order in the morning, you wouldn't get the plot until the next day."

Still, when the manager compares the maintenance requirement

See Plotters, next page

Plotters

From previous page

of his present plotter with that of his previous HP pen plotter, he's tempted to wax nostalgic. "When we had the HP plotter, we'd spend about 15 minutes a month on maintenance," the manager said. "Now we spend almost 15 hours."

Drawing applications. Most plotters are busy printing architectural or engineering

drawings using standard CAD packages or other vector-based packages.

However, a growing number of users want their plotter to print files created in standard drawing programs. MacPlot from Microspot USA Inc. and Plottergeist from Palomar Software Inc. allow users to plot drawings created in programs that support QuickDraw, including Claris Corp.'s MacProject and Adobe Photoshop.

Hardwick said he uses MacPlot to print

MacProject PERT charts on his Mutoh XP-500 plotter. He said that most project charts would take a large number of pages if printed on legal paper. And taping all the sheets together is time-consuming and looks messy. Now using E-size paper he usually can print a complete project chart on a single sheet.

This use alone has helped him sell upper management on the purchase. "We were able to more easily justify [purchasing the plotter] because we could use it for blue-

prints as well as PERT charts," he said.

Another product, PageBlaster Universal from Pacific Rim Data Sciences Inc., allows an HP DesignJet 600 to print PostScript files.

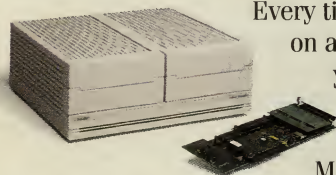
Architect Mackall uses PageBlaster to provide him with PostScript fonts, which he uses to label his blueprints. "The look of our plots is very important to us since it represents our company," he said. "The capability to do PostScript lettering on a blueprint really sets us apart."

Plotter technologies continue to increase in sophistication while dropping in price. When combined with the wide range of Mac applications that can now use plotters, even companies with limited budgets can find a plotter product that will fit their needs. □

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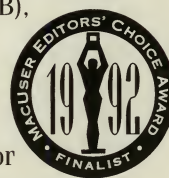
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MacInTouch RIC FORD

IBM hard disk drives Duo owners a bit crazy

Did IBM stick Apple with some bad drives for the PowerBooks? Attempts to diagnose the source of disk corruption are tangled in theories.

BUGS & TIPS

Signs of the time. When a score of Macintosh experts, Apple technical-support people and product managers cannot diagnose a problem after weeks of effort, it's a bad sign.

And it may just be a sign of the times. We are fighting daily battles with Mac technical problems that gather force with every new model, every change to the operating system and every new product.

In this case, the problem is particularly ironic, because it involves IBM hard drives that Apple buys and sells in its own products.

Customers with new PowerBook Duos and PowerBook 180s have been reporting a strange bug that corrupts their hard disks whenever the Mac is restarted without going through the normal shutdown

process. We encountered the same problem with two Duo 230s during our review (see MacWEEK, Jan. 25).

After the restart, the PowerBook no longer will start up from the hard disk, and the hard disk will not show up on the desktop. (In a Duo without a dock or floppy drive, the system is rendered useless.)

The one factor that appears to be constant is an internal, 120-Mbyte IBM hard drive, Model WDS2120, Version S120.

Mystery tour. The problem does not occur consistently, and a thicket of theories has sprung up as various people attempt to isolate the bug and work around it.

One theory, supported by Apple's phone support people, holds that nonstandard partition sizes are related to the bug.

Apple's HD SC Setup utility can waste megabytes of space with its default partition settings, so people often choose custom partitioning to gain more room. However, there are reports of the problem on drives with standard partition sizes as well as reports of large partition sizes that worked.

Another theory relates the bug to disk-formatting software, but it has been reported with various Apple and third-party drivers installed.

Additional suspects under investigation include Apple's Installer scripts and the status of the power-saving mode of the computer at formatting time. My own theory is that the hardware or firmware of the IBM drive has a bug that may vary from unit to unit.

Steering a course. One solution has emerged in the discussions so far: Avoid the 120-Mbyte IBM drive and use a different hard disk. Switching to a Quantum drive solved the problem for at least one person, leading to the conclusion that the hardware itself must be at fault.

If you have the IBM drive and the problem, you may be able to get it fixed through Apple. One customer got a replacement Duo from his dealer when the original one had the problem right out of the box. The new one worked correctly.

When you have to deal with the problem yourself, you may be able to eliminate it by creating multiple partitions on the drive with a third-party formatter or by keeping the partition at its default, smaller size with Apple's formatter.

Recovery utilities, such as MacTools from Central Point Software Inc., Norton Utilities from Symantec Corp. and Public Utilities from Fifth Generation Systems Inc., should be able to recover the data if you can start the system from a different disk. The corruption appears to be in the VIB (Volume Information Block), and utilities can reconstruct it from duplicate data elsewhere on the volume.

One problem is that new Macs require System Enablers for start-up, and these files are not contained on third-party recovery disks. You can make a custom recovery disk that contains an Enabler, often a tricky process, or start up from a different hard drive that has the Enabler.

Things really get sticky on Duos without a dock. The only real option is to install a System folder and utilities in a RAM disk as a hedge against a hard drive crash.

Between the cracks. Apple's Duo product manager, Peter Fletcher, reports that the PowerBook service group has no widespread reports of drive problems, but he is checking further into the issue.

This may be just another one of

Ask David Ramsey

Apple says: 'Don't call us'

My Jan. 11 column directed end users to report bugs to the APPLE.BUGS address on AppleLink. This advice caused some confusion, since the last paragraph of the column was cut by overzealous editors. The missing piece read: "You won't get any acknowledgment of your report, but it will be seen and read by real Apple engineers and perhaps even passed around the office for a laugh."



Apple's Developer Technical Support (DTS, the group on the receiving end of APPLE.BUGS) wasn't too thrilled about receiving *hundreds* of "my Mac crashed" messages. As a registered developer, it behooves me to keep on DTS' good side, so in the spirit of setting the record straight I'd like to present the official Apple policy, according to DTS' own Mark Johnson: "Although Apple currently maintains an APPLE.BUGS address on AppleLink, it was never intended for customer bug reporting.

"Developers who are part of Apple's North American Partners and Associates programs should submit development-related bug reports to the Developer Support Center at DEVSUPPORT on AppleLink. International Partners and Associates should submit bugs to their regional support offices. This is a recent change to provide greater responsiveness and accountability for developer-reported bugs, which used to be routed to the APPLE.BUGS address.

"The rest of the customer base should report bugs to their normal support channel, be that their dealer, their systems engineers or Apple's support lines for products, such as System 7.1, where support is part of the purchase of the software package. These channels all have access to the appropriate escalation points within Apple to report and track bugs."

Q. One of the Macs I use mounts several network volumes at start-up time. How can I disable this?

A. The approved method is to bring up the Chooser, select AppleShare, double-click the server in question and uncheck the "mount at startup" check box by each volume. The quicker way is to throw away the AppleShare Preferences file in the Preferences folder inside your System folder.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

those things where a few, unfortunate people fall through the cracks as Apple pumps out millions of units like an automobile manufacturer.

Omega sanity. The hack for enabling Omega SANE (see MacWEEK, Jan. 25) created some confusion among readers.

The first problem is the ROM version number, which means different things in different utilities. Look for a utility, such as the current version of

TattleTale, 1.5.4, that displays a hexadecimal number (\$67C for IICx, \$178 for SE/30, IICx, IIX). A ROM version such as "124," given by MacEnvy and older versions of TattleTale, is something confusingly different.

The second trick is in using ResEdit. To add Omega SANE in the ROV# resources, select the last row of asterisks, then choose Add New Field from a menu. Next, type PACK in the Resource Type box and type "4" in the Resource ID box. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to RICFORD on AppleLink or MCI Mail; to 72511,44 on CompuServe; or on the Internet to 72511.44@compuserve.com. Join us on-line in the MacWEEK Forum at location ZMC:MACWEEK on CompuServe or ZiffNet/Mac.

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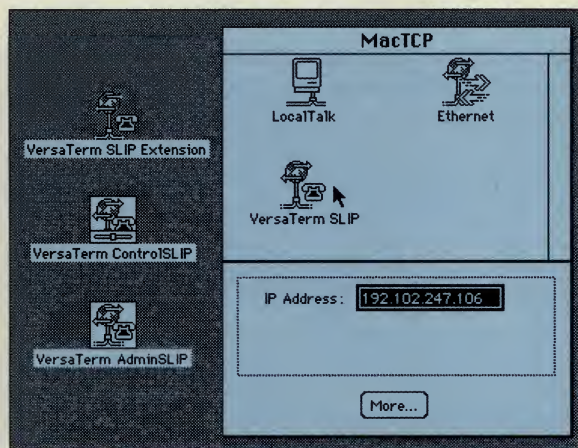
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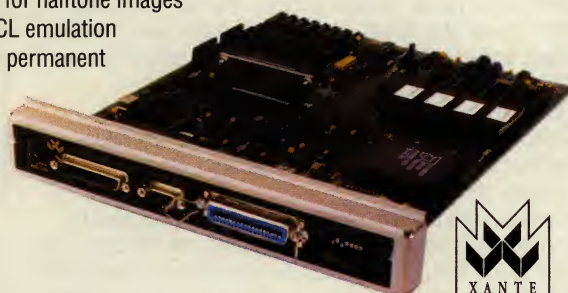
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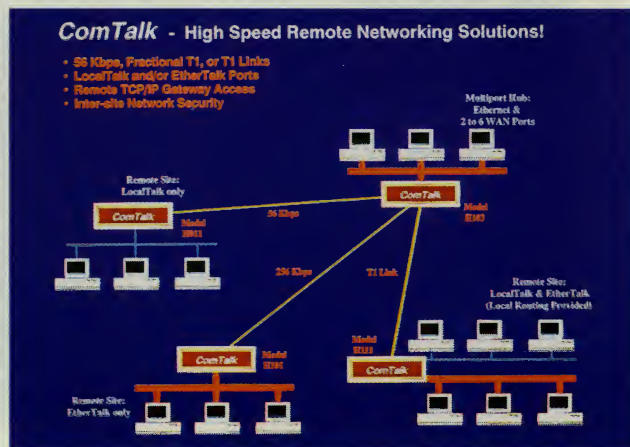
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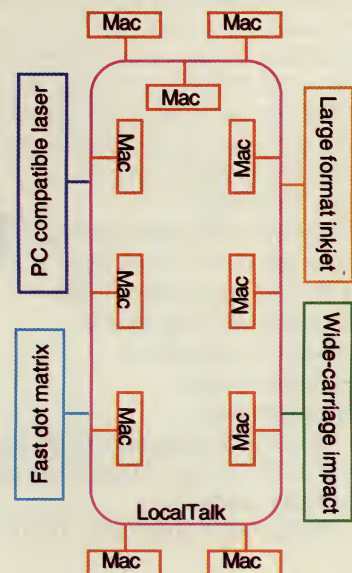
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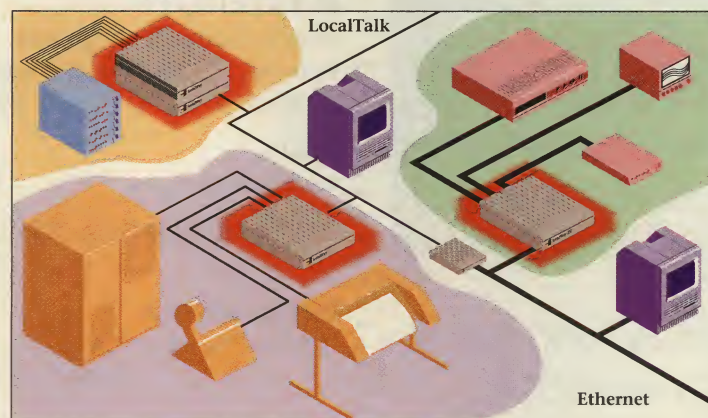
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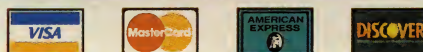
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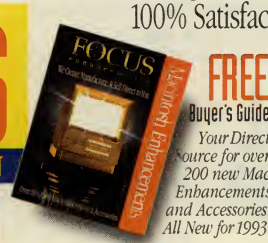
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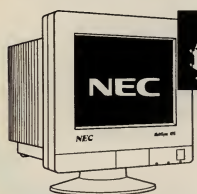
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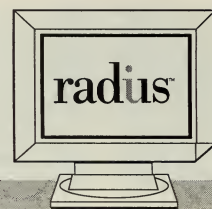
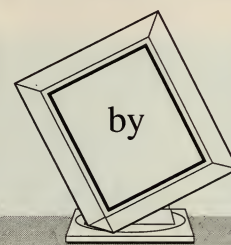
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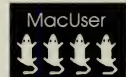
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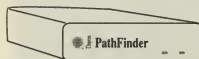
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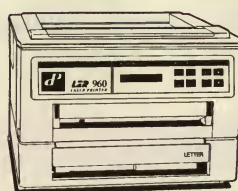
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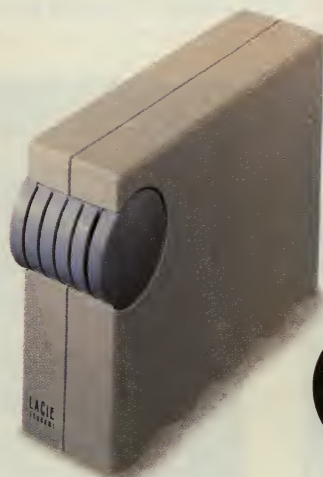
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SyQuest 88mb (*One Cartridge Included)	\$495
SyQuest 88mb C** (*One Cartridge Included)	\$615
Internal 44mb SyQuest (for Quadra 900&950)	\$365
Internal 88mb SyQuest (for Quadra 900&950)	\$465
Internal 88mb C SyQuest (for Quadra 900&950)	\$595
SyQuest Dual 44mb (*One Cartridge Included)	\$725
SyQuest Dual 88mb (*One Cartridge Included)	\$895
SyQuest Dual 44/88mb (*One 44 & 88 Cartridge)	\$895
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ELS 85mb	17ms	3.5"TH	\$219	\$279
ELS 127mb	17ms	3.5"TH	\$289	\$349
ELS 170mb	17ms	3.5"TH	\$319	\$379
Pro 425mb	9ms	3.5"TH	\$879	\$939
Pro 700mb	10ms	3.5"TH	\$1199	\$1259
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*All tape backup drives come bundled with FREE Retrospect V.1.3, one tape and have a one year warranty

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Model	Speed	Size	External
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RICOH

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*All Floptical drives come with FWD HDT software, one 3M cartridge and have a ONE year warranty

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ONE year Warranty on 3.5" Drives and TWO Years on 5.25" Drives

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1.2gb	15ms	5.25"FH	\$1525	\$1625
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Syquest 44 MB Removable	\$399
Syquest Media	
Unformatted 44 MB	\$61
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Formatted 44 MB	\$85
Formatted 88 MB	\$139



ZERO FOOTPRINT DRIVES

We've gotten letters lately - mostly in crayon - from a few folks asking why we call these drives "zero footprint" when they obviously exist in three dimensions and take up space. We'd like to point out that when placed under your Plus or Classic or SE it takes up no more space than the computer already does. Zero. Neat trick, huh? Our sturdy zero-footprint drives feature a number of different mechanisms from makers like Conner, Quantum, Toshiba. Check the matrix below for the capacity you need. And please, put down that crayon.

Capacity (MB)	Model Number	Average Access Time (msec)	Transfer rate (K/sec)	MTBF (Hours)	MFG warranty (months)	Internal Drive Price	External Drive Price	Cyclone Drive Price
Conner								
85	CP-30080E	16	1300	150000	24	\$219	\$289	
120	CP-30100	16	1300	150000	24	\$279	\$349	
170	CP-30170E	16	1400	150000	24	\$319	\$379	
213	CP-30200	15	2000	150000	24	\$419	\$479	
Quantum								
42	ELS 42S	19	1600	250000	24	\$185	\$249	
85	ELS 85S	17	1800	250000	24	\$229	\$299	
127	ELS 127S	17	1800	250000	24	\$319	\$379	
170	ELS 170S	17	2000	250000	24	\$349	\$409	
240	LPS 240S	16	2300	250000	24	\$499	\$569	
525	LPS 525S	10	2900	350000	24	\$1069	\$1119	\$1169
80 (Pwrbk)	GRS-80	17	1900	150000	12	\$349		
120 (Pwrbk)	GRS-120	17	1800	150000	12	\$469		
160 (Pwrbk)	GRS-160	17	1900	150000	12	\$519		
Toshiba								
870	MK-438	12	1500	250000	36	\$1099	\$1159	\$1199
1.2 GB	MK-538	12	2800	250000	36	\$1449	\$1499	\$1549
DEC								
1.05GB	DSP-3105	9.5	2600	250000	60	\$1799	\$1849	\$1899

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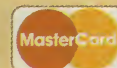
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B. SuperMac (SuperMatch) 21"	2,529	Hitachi								
SuperMac 21" Mono/Grayscale	989	—								
C. RasterOps 20" Trinitron Multi-Mode	\$2,329	Trinitron								
Radius Precision Color 20"	2,389	Trinitron								
RasterOps 20" Hitachi Color	1,469	Hitachi								
D. RealTech 20" Trinitron Multi-Mode	1,895	Trinitron								
E. SuperMac 20" (SuperMatch)	1,499	Hitachi								
SuperMac 20" (SuperMatch Dual-Mode)	2,499	Trinitron								
F. NEC 17" 5FG Color	\$1,589	Toshiba								
RasterOps 16" (RasterOps Sweet 16)	1,249	Panasonic								
G. RealTech 17" (RealTech Multi-Mode)	995	Hitachi								
H. Sony 17"	1,189	Trinitron								
I. Seiko Instruments 17" CM1760LR	1,249	Trinitron								
J. Radius Precision Color Pivot 15"	\$959	Non-Trinitron								
K. RealTech 15" Grayscale	449	—								
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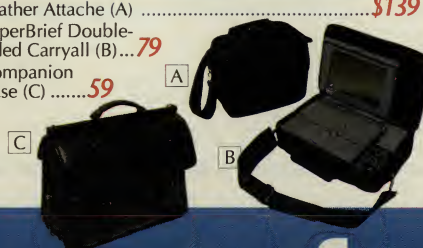
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Connects Mac II computers to thick, thin, fiber optic or 10Base-T Ethernet cable systems.

Includes an RJ-45 jack for 10Base-T wiring.

DaynaPORT E/II-T NuBus Card\$149

DaynaPort E/Z. Ideal for Macs that don't have a slot for a network interface card.

DaynaPORT E/Z\$269

Dayna EtherPrint

Divides your network into multiple zones.

Dayna EtherPrint.....\$335

Dayna EtherPrint Plus.....\$439



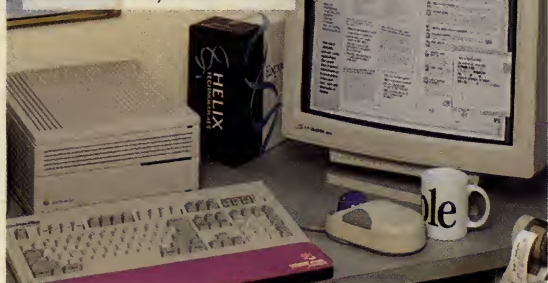
Systems Configured to your specifications

Here are a few of the systems/workstations we sell. We'll let you mix and match your choice of components.

Macintosh IIfx Business Solution

Macintosh IIfx with 5 Mb of RAM, 212 Mb hard drive, Supermac 21" platinum monitor with video card, cache card, and Key Tronic MacPro Plus extended keyboard.

\$4,095
Lease: \$112/month



\$2,729
Lease: \$77/mo.

Mac IIsi Solution



Macintosh IIsi with 5 Mb of RAM, 120 Mb hard drive, Seiko Instruments CM 1445 14" Trinitron monitor, and Key Tronic MacPro Plus extended keyboard.

\$7,849
Lease: \$215/month

Quadra 700/Trinitron Intermediate Graphics Solution

Quadra 700, 8 Mb of RAM, 520 Mb hard drive, RealTech 20" Trinitron monitor w/PaintBoard Li and Key Tronic MacPro Plus extended keyboard.

Hours: 8 am-7 pm Central Standard Time

30-DAY MONEY-BACK GUARANTEE on all hardware (except printer consumables and special-order items). Before returning merchandise, call our Customer Service Dept. toll-free to receive a returned merchandise authorization number (RMA), which must be included with any products you return. No C.O.D. returns, please. Thank you for your cooperation. ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Scanners

FAX: 1-409-539-4141
CALL: 1-409-760-2400

Toll-free tech support:
1-800-364-MACS

Flatbed desktop scanners for 24-bit color, 8-bit grayscale, and black/white images. Ideal for mid-range output or position prints for mockups/presentations.

	Price	DPI	Brightness & contrast levels	Scanning area	Flat art	Transparencies	Slides	Software
MICROTEK								
Scanmaker II	\$909	600	14	8.5 x 13.5	■			Includes limited version of Adobe Photoshop
Scanmaker IIIXE	1,179	600	14	8.5 x 13.5	■			Includes full version of Adobe Photoshop
Scanmaker 1850 Slide Scanner	1,569	1850	14	2.5 square inches		■		Includes full version of Adobe Photoshop
REALTECH								
Scan 800 Optional Adobe Photoshop	\$1,199 200	800	200	8.5 x 11.75	■			Includes Scan-Match color calibration software
Scan 800 with Transparency Option	1,695	800	200	8.5 x 11.75	■	■	■	
UMAX								
UC 630	\$1,119	600	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(600)	(51)	6 x 9	■	■	■	
UC 840	1,289	800	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(800)	(51)	6 x 9	■	■	■	
UC 1200S	3,019	1200	51	8 x 11.8	■			Includes full version of Adobe Photoshop
Transparency Option	729	(1200)	(51)		■	■	■	



The photo above is a 300 dpi image of an 8 x 10 transparency. It was scanned on the RealTech Scan 800 with Transparency Option, then adjusted with ScanMatch and color-corrected with Adobe Photoshop.

Scanners & Printers

Laser printers

The right printer can do wonders for your productivity. Do you need speed? Adobe PostScript Level 2? Do you need to print a lot of pages each month?

NEC Silentwriter Model 95

300 dpi
6 pages/min.
2 Mb RAM (expandable to 5 Mb)

\$1,469
Lease: \$40/month

■ Adobe PostScript Level 2
■ Motorola 68000 processor

■ 6,000 pages per month
■ Built-in envelope feeder & 250-sheet tray; optional 2nd tray available in letter or legal sizes

■ No SCSI port
■ Appletalk RS-422, parallel, and RS-232C

■ 35 Micro-line toner and NEC's patented "Sharp Edge" technology create sharp black print quality



NewGen 400P

400 dpi
4 pages/min.
4 Mb RAM (expandable to 16 Mb)

■ PostScript compatible
■ Weitek XL-8220 processor

■ 3,500 pages per month
■ Optional 2nd paper drawer

■ Optional SCSI port
■ Appletalk RS-422, parallel, and RS-232C

■ 35

\$1,879
Lease: \$51/month

RealTech Laser

300 dpi
9 pages/min.
2 Mb RAM (expandable to 10 Mb)

■ Adobe PostScript Level 2
■ Weitek RISC processor

■ 5,000 pages per month
■ Optional 2nd paper tray & cassette feeder are available for \$250 (for both)

■ SCSI port
■ Appletalk RS-422, parallel, and RS-232C

■ 35 ATM font rendering technology builds raw type characters 4 to 5 times faster, enabling the RealTech Laser to print complex documents faster than other printers in its price range.

\$1,595
Lease: \$44/month

Texas Instruments MicroLaser XL Turbo

300 dpi
16 pages/min.
2.5 Mb RAM (expandable to 10.5 Mb)

■ Adobe PostScript Level 2
■ Weitek RISC processor

■ 25,000 pages per month
■ Optional 2nd paper drawer

■ Optional SCSI port
■ Appletalk RS-422, parallel, and RS-232C

■ 35

\$2,795
Lease: \$77/month

Texas Instruments MicroLaser Plus

300 dpi
9 pages/min.
1.5 Mb RAM (expandable to 4.5 Mb)

■ Adobe PostScript Level 1
■ Motorola 68000 processor

■ 10,000 pages per month
■ Optional 2nd paper drawer and envelope feeder

■ Optional SCSI port
■ Appletalk RS-422, parallel, and RS-232C

■ 17

\$1,249
Lease: \$34/month

The only 11x17 printer with Adobe PostScript Level 2 for less than \$3500.



■ Choice of 300 or 400 dpi
■ 15 ppm (letter size); 8 ppm (tabloid size)
■ 4 Mb RAM (expandable to 16 Mb)

■ Adobe PostScript Level 2
■ Weitek RISC processor (and ATM font rendering technology)

■ 20,000 pages per month
■ Two paper trays included (one tray for letter size; one tray for tabloid size.)

■ SCSI port

■ 35 Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.

Jeannie is thrilled that she can print proofs of her company newsletter on tabloid-size paper. No more tiling!

\$3,195
Lease: \$88/mo.

Quote from MacUser September 1992 issue, "Personal PostScript Printers" by Bruce Fraser.

"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

★★★★★ MACWORLD MAGAZINE September 1992

QMS 860 Hammerhead

600 dpi
8 ppm (letter size); 4.6 ppm (tabloid size)
12 Mb RAM (expandable to 32)

■ Adobe PostScript compatible
■ Intel 80960CA RISC processor

■ 10,000 pages per month
■ Optional 2nd paper cassette

■ SCSI port

■ 39 fonts

\$4,279
Lease: \$117/mo.

Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.



Quantum



GO•Drives have 32k cache, low power consumption, MTBF of 150,000 hours, and ONE Year Warranty. ELS drives have 32k cache, low power consumption, MTBF of 250,000 hours and TWO Year Warranty. LPS drives have 64k-256k cache, MTBF of 250,000 hours, and TWO Year Warranty. PRO drives have 256k cache, MTBF of 150,000 hours, and TWO Year Warranty.

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
GO•DRIVE (2.5" HARD DRIVES DESIGNED FOR NOTEBOOKS)					
80mb	GO80	17ms	80mb	\$325	\$425
120mb	GO120	17ms	120mb	\$455	\$555
160mb	GRS160	17ms	160mb	\$549	\$649
ELS SERIES (3.5" LOW PROFILE AND LOW POWER)					
42mb	ELS42	19ms	40mb	\$175	\$235
85mb	ELS85	17ms	82mb	\$215	\$275
127mb	ELS127	17ms	124mb	\$295	\$355
170mb	ELS170	17ms	160mb	\$325	\$385
LPS SERIES (3.5" LOW PROFILE)					
105mb	LPS105	11ms	100mb	\$255	\$315
240mb	LPS240	10ms	234mb	\$445	\$505
525mb	LPS525	10ms	500mb	\$945	\$1005
PRODRIVE SERIES (3.5" HALF HEIGHT)					
425mb	PRO425	9ms	406mb	\$899	\$959
700mb	PRO700	10ms	670mb	\$1195	\$1255
1.0GIG	PRO1050	10ms	1001mb	\$1365	\$1425
1.2GIG	PRO1225	10ms	1165mb	\$1595	\$1655

Maxtor



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
XT SERIES (3.5" LOW PROFILE)					
120mb	7120S	15ms	121mb	\$269	\$329
207mb	7213S	15ms	202mb	\$389	\$449
LXT SERIES (3.5" HALF HEIGHT)					
330mb	LXT-340	15ms	324mb	\$635	\$695
535mb	LXT-535	12ms	510mb	\$975	\$1035
XT-8000 AND PANTHER SERIES (5.25" FULL HEIGHT)					
645mb	XT-8760S	16.5ms	639mb	\$1179	\$1279
1.2GIG	PO-12S	13ms	997mb	\$1429	\$1529
1.7GIG	P1-17S	13ms	1433mb	\$1729	\$1829

Maxtor 3.5" drives carry a ONE Year Warranty. Maxtor 5.25" drives carry a TWO Year Warranty.

Seagate

Featuring...
the ELITE SERIES



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" DISK DRIVES						
248mb	ST3283N	Low Profile	12ms	235mb	\$479	\$539
1.2GIG	ST11200N	Half Height	10.5ms	1000mb	\$1535	\$1595
WREN AND ELITE SERIES (5.25" FULL HEIGHT)						
645mb	ST4767N	Wren Runner II	11.9ms	634mb	\$1519	\$1619
1.2GIG	ST41200N	Wren-7	15ms	989mb	\$1399	\$1499
1.6GIG	ST41651N	Wren-8	15ms	1350mb	\$1715	\$1815
2.1GIG	ST42100N	Wren-9	12.9ms	1900mb	\$1935	\$2035
1.6GIG	ST41600N	Elite-1	11.5ms	1307mb	\$2029	\$2129
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$2919	\$3019
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$3929	\$4029

Seagate drives carry a ONE Year Warranty.

HEWLETT PACKARD

FIVE YEAR
WARRANTY



Unformatted Capacity	Model	Access Time	Actual Mac Capacity	Internal	External
3.5" HALF HEIGHT DRIVES					
234mb	C2233	12.6ms	223mb	\$799	\$859
422mb	C2235	12.6ms	402mb	\$1049	\$1109
1.2GIG	C2247	10.5ms	1000mb	\$1955	\$2015
5.25" FULL HEIGHT DRIVES					
677mb	97556	13.5ms	633mb	\$1465	\$1565
1.2GIG	97558	13.5ms	1020mb	\$1665	\$1765
1.6GIG	97560	13.5ms	1292mb	\$1995	\$2095
2.4GIG	CP3010	11.5ms	2000mb	\$2999	\$3099

FUJITSU



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
425mb	M2623FA	3.5" Half Height	9ms	405mb	\$899	\$959
520mb	M2624FA	3.5" Half Height	9ms	496mb	\$989	\$1049
1.1GIG	NEW	3.5" Half Height	8.5ms	995mb	\$1795	\$1895
1.2GIG	M2266	5.25" Full Height	14.5ms	1029mb	\$1529	\$1629
2.0GIG	M2652	5.25" Full Height	14.5ms	1665mb	\$2495	\$2595
2.4GIG	NEW	5.25" Full Height	11.5ms	2000mb	\$2595	\$2695



ClubMac 88c will allow you to read and write both 44mb and 88mb cartridges. Finally, there's one simple solution. Buy the drive that will offer complete compatibility with all SyQuest based cartridges. Buy the ClubMac 88c.



ClubMac SyQuest Dual Drives offer users the most convenient way to exchange data between cartridges.



Internal SyQuest Technology, essential for every Quadra 900/950, Ilvix, Ilvi and Performa 600 user, is available from ClubMac TODAY!

CLUBMAC 88c REMOVABLES*

- ClubMac 88c External (SQ5110C) \$589
- ClubMac 88c Internal \$559
- ClubMac 88c Dual \$1079

* ClubMac 88c will read and write 44mb cartridges, but will not format 44mb cartridges.

CLUBMAC 44MB REMOVABLES

- ClubMac 44mb External (SQ555) \$385
- ClubMac 44mb Internal \$345
- ClubMac 44mb Dual \$725

CLUBMAC 88MB REMOVABLES

- ClubMac 88mb External (SQ5110) \$489
- ClubMac 88mb Internal \$469
- ClubMac 88mb Dual \$895

SYQUEST CARTRIDGES

- 44mb Cartridge \$63
- 88mb Cartridge \$97

NEW
SyQuest 88c

FEATURING

SyQuest®
REMOVABLE
TECHNOLOGY

SyQuest Drives include

- TWO Year Warranty
- One cartridge and necessary cables
- SCSI Director™ Formatting Utility

SyQuest Cartridges carry a ONE Year Warranty.

CONNER

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
85mb	CP30080E	3.5" Low Profile	17ms	82mb	\$225	\$285
120mb	CP30100	3.5" Low Profile	19ms	116mb	\$285	\$345
170mb	CP30170E	3.5" Low Profile	15ms	160mb	\$315	\$375
212mb	CP30200	3.5" Low Profile	12ms	206mb	\$425	\$485
540mb	CP30540	3.5" Half Height	8.5ms	515mb	\$985	\$1045

Conner drives carry a ONE Year Warranty.

FIVE
YEAR
WARRANTY

MICROPOLIS

Unformatted Capacity	Model	Description	Access Time	Internal	External
1.0GIG	2112	3.5" Half Height/Fast SCSI-2	10ms	\$1699	\$1759
2.0GIG	1924	5.25" Full Height/Fast SCSI-2	11.5ms	\$2849	\$2949

GREAT
Media
PRICES

60 meter DAT \$13
90 meter DAT \$16
CT600N \$19
CT600F \$28
Exabyte 8mm \$18

ClubMac
TAPE
BACKUP
Systems



Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$469	\$489
600mb	Teac MT2ST/F50	Analog	CT600F	\$679	\$699
2.0GIG	ARDat	DAT, DDS	4mm	\$1169	\$1189
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1249	\$1269
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm		\$1489
2.0GIG	HP 35470A	DAT, DDS	4mm	\$1329	\$1349
3-5GIG	HP 35480A	DAT, DDS-DC	4mm	\$1529	\$1549
2.2GIG	Exabyte EXB-8200	Digital/Helical	8mm		\$1859
5.0GIG	Exabyte EXB-8500	Digital/Helical	8mm		\$2849

Tape BackUp Systems include RetroSpect v.1.3c Backup Software, ONE cartridge and ONE Year Warranty.

ClubMac
OPTICAL
Drives



Model	Capacity	Description	Seek	External
CMO-OD3000 Teac	128mb	3.5" Half Height	45ms	\$999
CMO-LF3004 Panasonic	128mb	3.5" Half Height	45ms	\$1129
CMO-3100E Ricoh	128mb	3.5" Half Height	45ms	\$1089
CMO-5031E Ricoh	594/652mb	5.25" Full Height	28ms	\$2385
Tahiti II MaxOptix	650mb/1.0GIG	5.25" Full Height	35ms	\$3269
128mb Cartridge	3.5" Single Sided			\$39
594/652mb Cartridge	5.25"-512/1024 bytes/sec			\$99

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

ClubMac

1-800-258-2622
3 Musick • Irvine, CA 92718

Sales, Info, Int'l (714)768-8130
Tech Support (714)768-1490
24-Hour Fax (714)768-9354

HP SCANJET IIc COLOR SCANNER**\$1295**

- 400 dpi (800 dpi via interpolation) single-pass scanning delivers superior image quality in both 24-bit color and 8-bit grayscale modes
- Exclusive HP AccuPage technology improves OCR accuracy
- Both image and text scanning mean maximum versatility
- Print-path calibration optimizes scan settings for selected printer
- Automatic Document Feeder \$499

HP SCANJET IIp GRAYSCALE SCANNER \$695

- 300dpi optical resolution delivers accurate, detailed scans
- 8-bit grayscale provides high-quality reproductions of photographs and illustrations
- Exclusive HP AccuPage technology improves text recognition and formatting
- Print-path calibration optimizes scan setting for selected printer
- Automatic Document Feeder \$279



**hp HEWLETT
PACKARD**
Authorized Scanner Dealer

EPSON**EPSON ES-600C**

- 300 X 300 dpi optical resolution, 1200 dpi via interpolation
- Epson's TruePass Scanning System (single or multi-pass)

ES-600C with ScanTastic **\$945**ES-600C with Full Photoshop & ScanTastic **\$1215****EPSON ES-800C**

- 400 X 400 dpi optical resolution, 1600 via interpolation
- Epson's TruePass Scanning System (single or multi-pass)

ES-800C with ScanTastic **\$1229**ES-800C with Full Photoshop & ScanTastic **\$1499**Automatic Document Feeder **\$465**Transparency Unit **\$765****MICROTEK****SCANMAKER II \$899**

- Up to 1200 dpi resolution via interpolation
- 24-bit color/8-bit grayscale
- Bundled with Adobe Photoshop LE

SCANMAKER IIXE \$1179

- Up to 1200 dpi resolution via interpolation
- 24-bit color/8-bit grayscale
- Bundled with FULL Adobe Photoshop

Auto Document Feeder **\$479**

SUPERMAC™

Graphic Cards • 5 Year Warranty
Displays • 3 Year Warranty

DISPLAYS

SuperMatch 21 Color Display	\$2529
SuperMatch 20-T Multimode Trinitron	\$2459
SuperMatch 20 Color Display	\$1479
SuperMatch 17-T Trinitron Color	\$1049
Platinum 21 Two-Page Display	\$999

ACCELERATORS/MULTIMEDIA

ThunderStorm	\$815
VideoSpigot NuBus / IIsi / LC	\$369 / 329 / 249
Spigot & Sound NuBus / Pro	\$479/1149
VideoSpigot Pro NuBus / IIsi	\$1069/1229

GRAPHIC CARDS

SuperView	\$365
Spectrum/24 PDQ Plus	\$1515
Spectrum/24 Series IV	\$815
Spectrum/8-24 PDQ NuBus or IIsi	\$815

DAYSTAR

D I G I T A L

POWERCACHE

(Classic, SE, LC, SE/30, II, IIs, IIsx, IIsi, IIsx, Performa)

	w/o FPU	w/ FPU
33 MHz PowerCache*	\$385	\$475
40 MHz PowerCache*	\$555	\$645
50 MHz PowerCache*	\$729	\$859
Equalizer LC	\$169	\$239
PowerCache Adapter	\$40	

MACINTOSH MEMORY...**QUADRA 950**

16mb Module	\$565
256K VRAM	\$25

VIDEO (Q700/Q900)

256K VRAM	\$25
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MAC MEMORY

1mb X 8 - 80ns	\$33
2mb x 8 - 80ns	\$64
4mb X 8 - 80ns	\$125
16mb X 8 - 80ns	\$Call

MAC IIFX

1mb X 8 - 80ns	\$35
4mb X 8 - 80ns	\$130
16mb X 8 - 80ns	\$Call

33 MHZ TURBO 040**FASTCACHE TURBO 33-128K ADAPTER \$359****CHARGER \$859****CACHE CARDS**

FastCache IIsi / with 68882	\$279 / 349
FastCache IIsi	\$215
FastCache 040 (128K - Q700/900)	\$259
FastCache 040 (128K - Q700/900/950)	\$399

EXPANSION BOARDS

DualPort IIsi	\$165
PowerMath LC	\$115

POWERBOOK 140/170

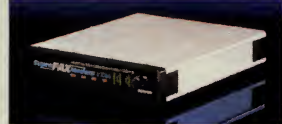
4MB Memory Module	\$165
6MB Memory Module	\$205

POWERBOOK 160/180

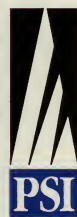
8MB Memory Module	\$335
10MB Memory Module	\$415

DUO 210/230

4MB Memory Module	\$Call
8MB Memory Module	\$Call

MODEMS...**SUPRAFAXMODEM \$349**

14.4 S/R fax, 14.4 data modem v.32bis, v.42bis, MNP 5 w/FaxST, Microphone and Software



PowerModem I	\$135
(24/96/48 S/R fax modem)	
PowerModem II	\$225
(24/96/96 S/R fax modem)	
PowerModem III	\$325
(96/96 S/R fax modem)	
PowerModem IV	\$379
(14.4/14.4 S/R fax modem)	

GLOBAL VILLAGE**POWERPORT**

Bronze (24/96 S/R fax modem)	\$189
Silver (96/96 S/R fax modem)	\$365
Gold (14,400 S/R fax modem)	\$419

TELEPORT

Bronze (24/96 S/R fax modem)	\$189
Silver (96/96 S/R fax modem)	\$359
Gold (14,400 S/R fax modem)	\$419

MISCELLANEOUS MAC PERIPHERALS...**SNOOPER****SNOOPER \$109**
includes FREE VIREX

**Kodak 701 Inkjet
Printer \$429**
includes interface kit

MEGA**BERNOULLI TRANSPORTABLE**

90mb	\$485
150mb	\$759

includes cartridge, cables, 5 Yr Warranty

CARTRIDGES

Tri-Pack 90mb	\$395
Tri-Pack 150mb	\$379

SAMPO**OFFICEPRO IIA \$499**

- 19", 1-bit monochrome monitor
- 1024 x 768 resolution
- Includes Monochrome Card for LC, SE/30 or NuBus

radius**RADIUS COLOR DISPLAYS**

Color Display/21	\$2979
PrecisionColor Pivot	\$949
PrecisionColor Display/19	\$2089
PrecisionColor Display/20	\$2319
PrecisionColor Display/20S	\$2349

RADIUS MONO/GS DISPLAYS

Full Page Display	\$569
Mono Pivot Display	\$699
Two Page Display/19	\$899
Two Page Display/21	\$1149
Two Page Display/21E	\$1299

RADIUS INTERFACES

Color Pivot / Mono Pivot	\$505 / 249
PowerView	\$499
PrecisionColor 8XJ	\$489
PrecisionColor 24X	\$1629
PrecisionColor 24XP / 24XK	\$489 / 819
Two Page / Full Page Display	\$395 / 189

ACCELERATORS

Rocket 25i / 33	\$1199 / 1939
RocketShare	\$419
SCSI-2 Booster	\$249

**VIDEOVISION (BASIC SYSTEM) \$1625****VIDEOVISION (PRESENTATION) \$1949**

PRESENTATION PACKAGE INCLUDES ADOBE PREMIERE 2.0
Everything you need to create hot desktop video presentations. Mix and record high-quality video, audio, and Macintosh graphics to videotape. VideoVision integrates QuickTime and other multimedia applications by providing computer graphics display, video input, and video output on a single card.

RASTEROPS CORPORATION**MOVIEPAK \$1499**

MoviePak is the real-time JPEG compression-decompression daughterboard for full-motion video digitizing and full-screen QuickTime playback along with full featured video editing software.

VIDEO/MULTIMEDIA/ACCELERATORS24XLTV / 24MxTV / 24STV **\$2639 / 1639 / 749**MediaTime / VideoTime **\$1519 / 1135****PhotoPro NuBus \$775****GRAPHIC DISPLAYS**

21" Color (2168)	\$2519
20 Multimode Color (2085H)	\$1329
20T MultiScan Trinitron (2075M)	\$2089
21" Mono/Gray Scale (2110)	\$999
15" Mono/GS Portrait (1510)	\$499

COLOR DISPLAY ADAPTERS

RasterOps ProColor 32	\$3195
RasterOps 24XLi / 24Sx	\$1939 / 619
PaintBoard 24 / Li	\$1529 / 829
RasterOps 24Mx / MxQ	\$1165
ColorBoard 264/SE30	\$699
RasterOps 8XLi or 8XL / 8X	\$929 / 465

ASANTÉ**5 YEAR WARRANTY****Mac II (NuBus)**

Thick/Thin/10BaseT, 64K	\$199
Thick/Thin, 64K	\$149
Thick/10BaseT, 64K	\$149

Mac IIsi & SE/30 (030 PDS)

Thick/Thin/10BaseT, 64K, FPU socket	\$199
Thick/Thin/10BaseT, 64K, FPU chip	\$289
Thick/Thin, 64K, FPU socket	\$149
Thick/Thin, 64K, FPU chip	\$245
Thick/10BaseT, 64K, FPU socket	\$149
Thick/10BaseT, 64K, FPU chip	\$245

Mac LC & LCII (020 & 030 PDS)

Thin/10BaseT, FPU Socket	\$199
Thin/10BaseT, FPU Chip	\$289
Thin, FPU Socket	\$149
Thin, FPU Chip	\$245
10BaseT, FPU Socket	\$149
10BaseT, FPU Chip	\$245

Mac SE (68000 PDS)

Thick/Thin/10BaseT, 32K	\$199
Thick/Thin, 32K	\$149
Thick/10BaseT, 32K	\$149

SCSI Products

Thick/Thin/10BaseT, Includes SCSI cable	\$299
Powerbook, Thick/Thin/10BaseT	\$329
10BaseT, Includes SCSI Cable	\$239
PowerBook, 10BaseT	\$269

FriendlyNet Adapters

Thin FriendlyNet Media Adapter	\$79
Thick FriendlyNet Media Adapter	\$79
10BaseT FriendlyNet Media Adapter	\$79

10BaseT Hubs

10BaseT Hub w/12 10T, Thick & Thin ports	\$479
10BaseT Hub w/8 10T, Thin ports	\$245
12-port Smart Hub	\$779
12-port Smart Hub w/SNMP Hardware Module	\$899
SNMP Card Agent for Mac (12-Pack)	\$120
AsantéView software only / Mac 2.0.Out of Bound	\$245

Bridging

AsantéPrint, Thick/Thin or Thick/10BaseT	\$319
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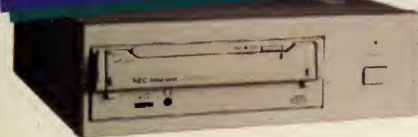
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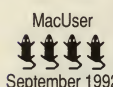
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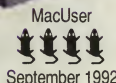


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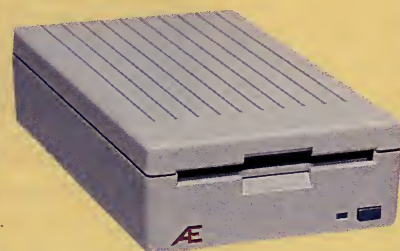
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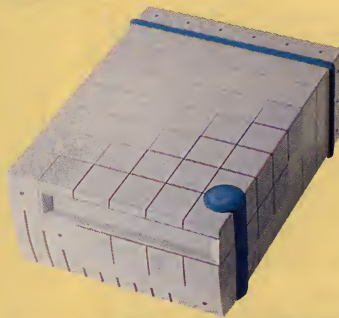
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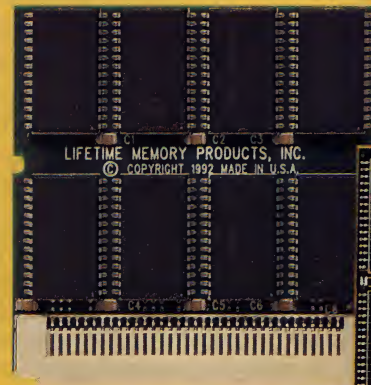


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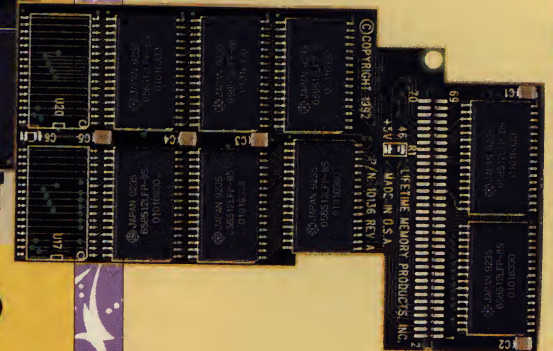
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CLASSIC/40 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		
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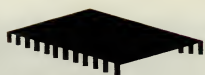
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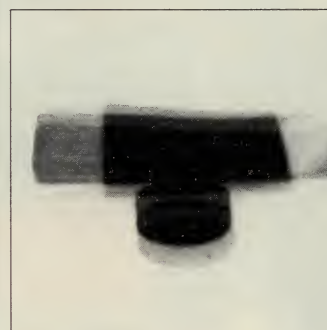
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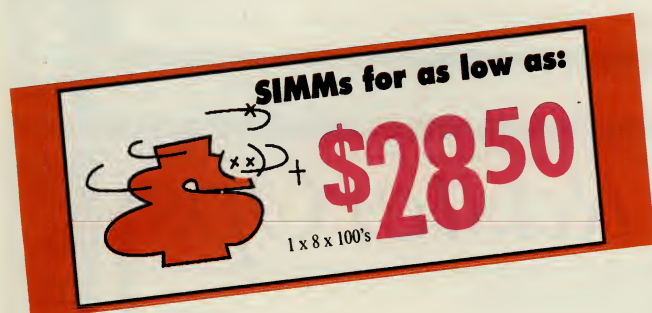
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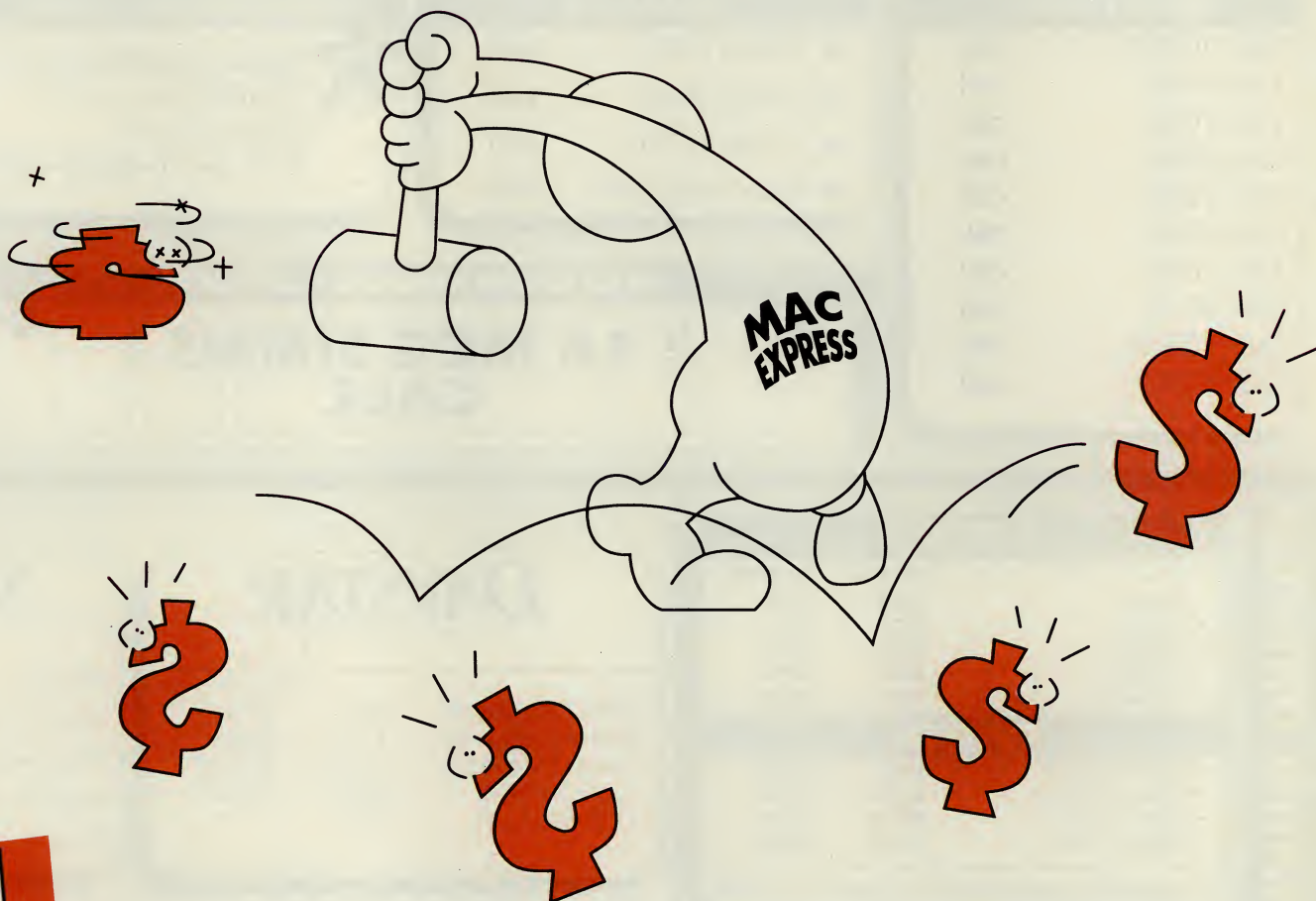
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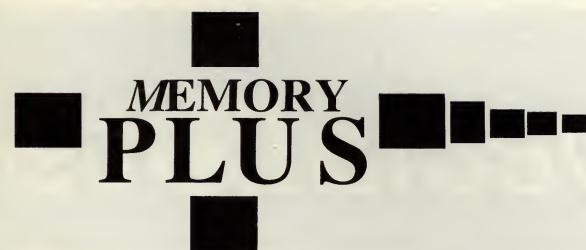
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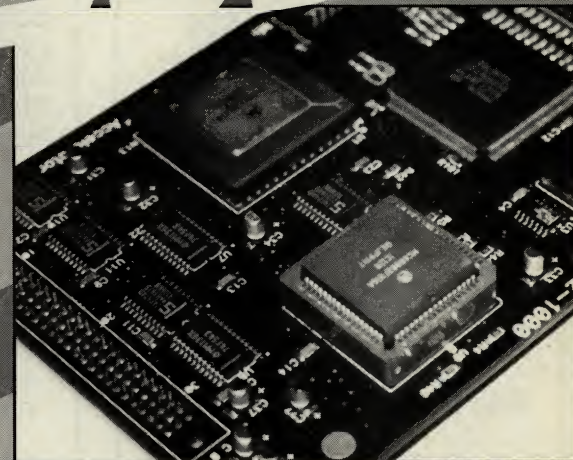
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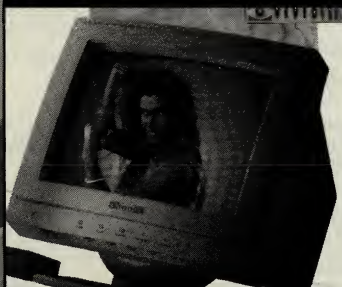
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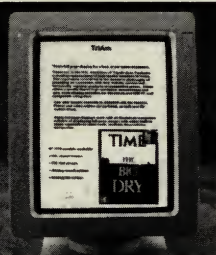
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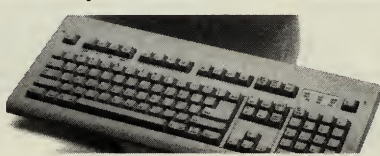
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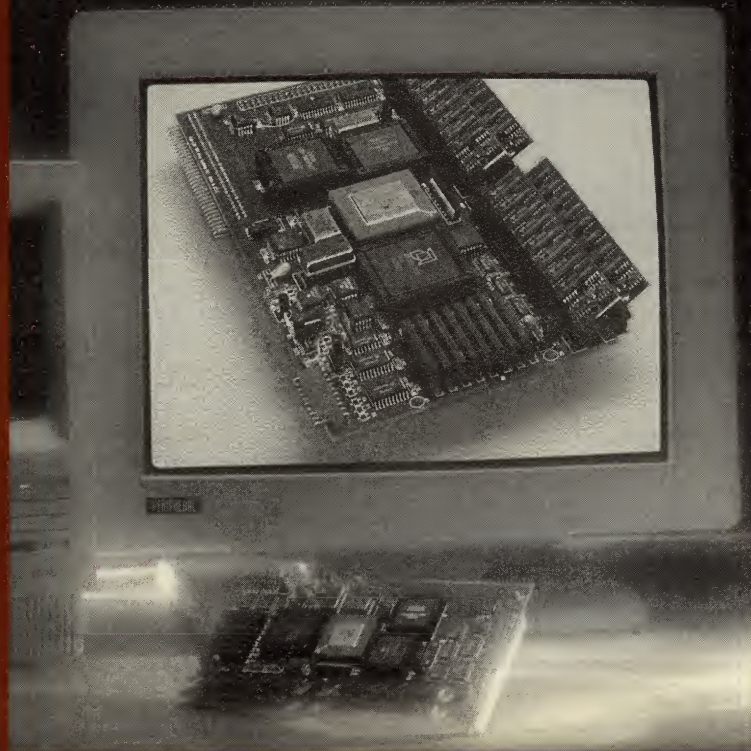
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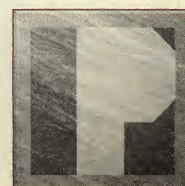
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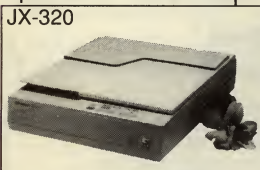
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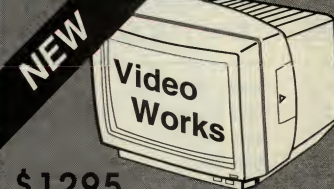
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BLOW-OUT

QMS PS-410 - \$799.00

(* with purchase of toner)

Like NEW, 300 dpi PostScript, Mac + IBM autoswitch, Factory Sealed/wrnty, (List - \$1,995.00)

FINAL PRICE REDUCTIONS! USED EQUIPMENT -

QMS ColorScript 100 - \$1,599.00

(List \$9,995.00) 300 dpi Color Laser/PostScript, USED

Stylewriter - \$199.00

Apple Laserwriter IINT - \$995.00

Apple Laserwriter IINTX - \$1,195.00

Classic II 4/40 - \$799.00

Mac SE 1/20 - \$499.00

Mac II cx 2/0 - \$949.00

Mac II 2/0 - \$699.00

CUSTOM CONFIGURATIONS AVAILABLE

APPLE COMPUTERS

CPU's

USED

Mac Plus - \$359.00

Mac Portable 1/40 - \$799.00

• Call for latest pricing on Macs:
SE/30, IIsi, IIfx, Powerbook, etc.

NEW

Mac Classic 2/40 - \$775.00

Mac IIsi 3/40 - \$1,099.00

PB 170 4/40/modem - \$2,799.00

• Call for latest pricing on Macs:
IIfx, Classic II, Powerbook, etc.

APPLE PRINTERS

USED

ImageWriter I Wide - \$149.00

Apple Laser IINT - \$995.00

Apple Laser IINTX - \$1,195.00

Apple Laser IIf - \$1,799.00

Apple Laser IIfx - \$2,299.00

POWER SUPPLY

Mac Plus - \$85.00
Mac SE + SE/30 - \$95.00
Mac SE Analog - \$115.00
Mac Classic - \$125.00
Mac LC/LCII - \$125.00
Mac II - \$250.00
Mac IIfx - \$275.00

LOGIC BOARDS

Mac Plus - \$199.00
Mac SE (800K) - \$225.00
Mac SE (FDHD) - \$275.00
Mac II - \$475.00
Mac Portable - \$250.00
Laser IINT - \$279.00
Laser IINTX - \$579.00

APPLE PARTS

VIDEO CARDS

4 bit - \$79.00
8 bit - \$95.00
Portrait Displ. - \$25.00
Radius, RasterOps,
SuperMac - \$Blow-Out

APPLE MONITORS

USED

12" Mono - \$175.00
12" RGB - \$325.00
13" Hi-Res RGB - \$450.00
Portrait Display - \$399.00
Two Page Mono - \$799.00
21" Color - \$1,999.00

OTHER MONITORS

Radius, Raster-Ops & SuperMac
Super Deals on New and
Demo Monitros
Cards, etc.
• Call for Super Prices !!!

QMS PRINTERS

PS 810 Postscript Printer - Turbo - \$1,595.00
PS 815 MR Printer - Demo - \$1,699.00
New - \$1,999.00
PS 820 Printer - Demo - \$1,499.00
New - \$1,699.00
PS 825 Printer - Demo MR - \$2,199.00
New - \$2,199.00
PS 2220 - Demo - \$3,750.00

APPLE ACCESSORIES

Apple Stand. KeyBoard - \$50.00, used
(w/CPU; or, w/o - CPU = \$65.00)
Portable Keyboard - \$35.00
Apple 3.5" (800K) Ext. FD - \$99.00, used
Hayes 2400B Int. Modem - \$25.00
Apple Personal Modem - \$40.00, used

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

New and Used Mac's

Bought and Sold

1-800-729-7031

Compare Our Prices, Quality & Service.

Entire Mac Line

Latest Models In Stock

Prices represent "2% Cash Discount!" -off Full Price.
Returns at discretion of Mgmt./15% Restocking fee.

Mac
S · A · L · E
INTERNATIONAL

LIMITED QUANTITIES

From the
beginning,
Relax's
relationship
with corporate
customers has
been strong.



As a matter-
of-fact, over
50% of our
sales are from
repeat
customers.

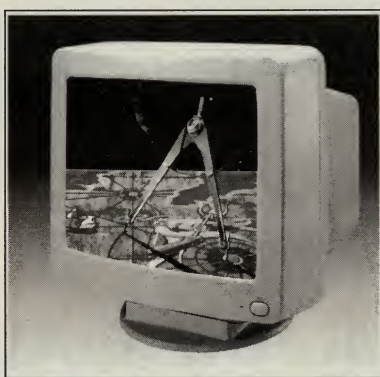


Our customers
must be
satisfied since
the majority of
our new
customers are
from referrals.



We must be
doing
something
right.

RELAX
T.E.C.H.N.O.L.O.G.Y.

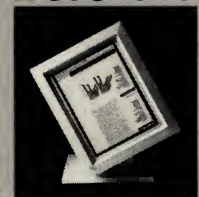


**20 Inch
Trinitron
Color!** **\$1,699**
Monitor Only

Trinitron Monitor Only 1,699
Business Package* - 256 Color 1,899
Artist Package* - 16 Million Color .. 2,549

* Package includes a new 20" Captronics CDS-8920 Mac compatible Trinitron color monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.

radius



Monochrome Pivot Monitor ... 745
PrecisionColor Pivot 15" 949
Multifrequency. Mac on-board compatible.
19" Monochrome Monitor 899
PrecisionColor Display/19 ... 1,999
Hitachi tube - multifrequency.
PrecisionColor Display/20 ... 2,299
Sony Trinitron tube - multifrequency.
Color Display/21 2,999
Two-page display. Hitachi tube - 1,152 x 870.
Mono Pivot Video Board 249
Color Pivot Video Board 499
PrecisionColor 8XJ 489
256 colors (8-bits) at maximum resolution (1,152 x 882), 4 display resolutions, accelerated.
PrecisionColor 8X 739
256 colors (8-bits) at maximum resolution (1,152 x 882), 4 display resolutions, accelerated.

Video Monitors & Packages

RASTEROPS*

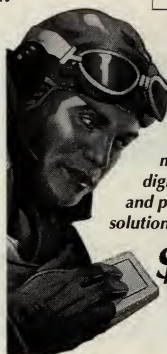
PaintBoard Li \$799

24-Bit Color - Low Cost!

Sweet 16 \$1,799

Limited Stock!

ProColor 32 3,149
24XLI 1,859
PaintBoard 24 1,459
PaintBoard Li 799
8XL 479
24STV - Multi Media 729
MoviePak 1,449
24XLTV 2,649
24MxTV 1,649
MediaTime 1,499
ClearVue/Classic 319
ClearVue/LC 319
"Sweet 16" Pkg 1,999

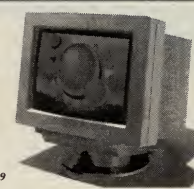


14 Inch
256 Color
Monitor!

\$359

Complete B-Bit Package - \$499

Compatible with Macintosh On-Board Video:
LC, LCII, si, ci and Quadra 900/950



MoviePak

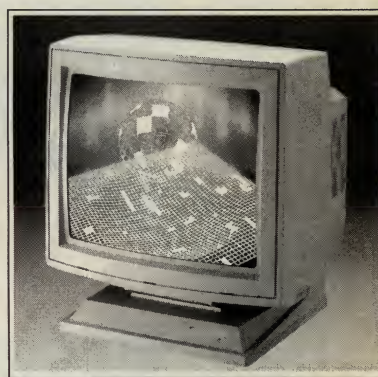
Introductory Special!

MoviePak works with all RasterOps multi-media display adapters to give you full-motion digital video recording, and full-screen playback and print-to-tape capabilities, all in a single-slot solution for any size Macintosh.

\$1,449

RASTEROPS*

For a limited time, MoviePak includes Adobe Premiere free - a \$695 value!



**20 Inch Hitachi
256 Color
Monitor!**

\$999

Monitor Only

20" Hitachi Monitor Only 999

Business Package* - 256 Color 1,199

Artist Package* - 16 Million Color .. 1,849

* Package includes a new 20" Hitachi Mac compatible color monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.

Your satisfaction is guaranteed or your money back!

**20 Inch Sampo
OfficePro Ila
256 Grayscale!** **\$599**
Monitor Only

Monitor Only 599
Mac II, x, fx, cx, ci Package* 799
Mac LC, LCII, SE/30 Package* 999

* Package includes a new 20" Sampo OfficePro Ila Mac compatible grayscale monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.

Your satisfaction is guaranteed or your money back!



Ethernet/Network



Asanté MacCon3 - 64K 199
The 3-in-1 (Thick, Thin and 10BaseT) Ethernet card for most expandable Macintoshes including the Ili and SE/30. Not available for the LC or LCII.

Asanté MacCon+ - 64K 159
Economical, 64K high-performance Ethernet for almost every model of Macintosh. Select either Thick/Thin or Thick/10BaseT. The Asanté MacCon+ models for the LC, LCII and Ili each have a socket for a co-processor.

Asanté FriendlyNet Adapters 79
Designed to work with the new Apple Ethernet cabling system - a plug-and-play networking system which makes Ethernet as simple and easy as LocalTalk.

Asanté 10BaseT Hub/8 239
An economical way to expand your Ethernet network using unshielded twisted pair wiring (10BaseT).

Asanté 10BaseT Hub/12 479
A more sophisticated and larger version of the Asanté 8-port Hub. The most economical way to expand your Ethernet network using unshielded twisted pair (UTP, 10BaseT). Fully supports IEEE specifications.

AsantéHub 1012 1,379
A 12-port, intelligent 10BaseT hub that offers all the features and benefits of a high-end enterprise hub for a departmental price. Built-in expansion slot for internet-working option cards (optional SNMP in-band module). The RS232 port provides access via remote dial-up, and the RJ45 and RJ21 allows connections for direct-to-computer or punch-down block connections. Multiple hubs can be interconnected via BNC, RJ45 and AUI. Works with AsantéView software (optional) for control directly or remotely. Out-of-band management.

Asanté Print 349
An inexpensive Ethernet-to-LocalTalk converter that easily connects one or two LocalTalk peripherals to an Ethernet network. With no switches to set or installation software to load, it is smart enough to work right out of the box. Thick/Thin or Thick/10BaseT.

Tribe LocalSwitch 1,499
LocalSwitch is a 16-port intelligent packet-switching hub for Macintosh networks. Using standard LocalTalk protocol and twisted pair wiring, LocalSwitch processes many network transmissions simultaneously.



\$1,499 **Tribe
LocalSwitch**

Modems

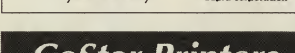
SupraFAX Modem Plus 2,400 199
2,400 bps Modem/9,600 send-receive FAX. v.42bis data compression for up to 9,600 bps data.

SupraFAX Modem v.32 9,600 299
9,600 bps Modem/9,600 send-receive FAX. v.42bis compression for up to 38,400 bps data.

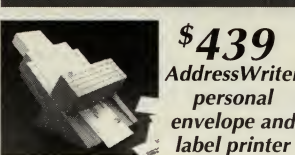


SupraFAX Modem v.32bis 14,400 ... 349
14,400 bps Modem/14,400 send-receive FAX. v.42bis compression for up to 57,600 bps data.

All SupraFAX modems include STB and MicroPhone software, cable and have a 5-year Warranty

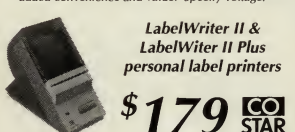


CoStar Printers



\$439
AddressWriter
personal
envelope and
label printer

AddressWriter Printer 439
144 x 144 impact dot-matrix print head. Optional label feeder will handle a variety of pin-fed labels for added convenience and value. Specify voltage.



LabelWriter II &
LabelWriter II Plus
personal label printers

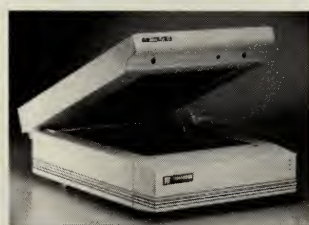
\$179 **CO
STAR**

The LabelWriter II and II Plus use direct thermal input technology to produce high-quality labels in a variety of sizes. The LabelWriter can be attached directly to your computer or AppleTalk Network.

LabelWriter II Mac 179
Handles up to 350 labels per roll. Maximum label size: 1-1/8" x 3-1/2". Prints one label in 3-1/2 secs.

LabelWriter II Plus Mac 249
Handles up to 700 labels per roll. Maximum label size: 2-1/4" x 4". Prints one label in 3-1/2 to 7 secs.

300/600/800/1,200 dpi Color & Grayscale Scanners



Tamarack 600 dpi Color Scanner \$979
and Slide Attachment \$549

Tamarack 600 Color Scanner:
24-Bit Color - 8.5" x 11.5" 979
Slide Attachment (shown) 549
PhotoShop LE (limited version)* 99
PhotoShop 2.0 (full version)* 199

Relax Color: (Epson Engine)

24-Bit Color Scanner - 8.5" x 11.5"
300 dpi - 110 VAC 999
300 dpi - 220 VAC 1,099
Color Studio LE (limited version)* 79
Color Studio 1.5 (full version)* 159

Umax Color Scanners:

UC630** - 8.5" x 14"
24-Bit 600 dpi w/PhotoShop ... 1,079
Transparency/Slide Attachment . 789
Auto Document Feeder 479
UC1200S** - 8.5" x 14"
24-Bit 1,200 dpi w/PhotoShop 2,999
Transparency/Slide Attachment . 889

Relisys Color Scanner:

ColdScan 800 - 8.5" x 14"
24-Bit 800 dpi 999
PhotoShop LE (limited version)* 99
PhotoShop 2.0 (full version)* 199

* with purchase of scanner, ** includes PhotoShop

SHARP® \$999
JX-320

16 Million Color - 300/600 dpi

An affordable, quality, flatbed 8-1/2" x 11", 24-bit color scanner for business and professional use.

Sharp's patented one-pass system ensures quality color while reducing scan times. 600 DPI using Sharp's proprietary software. By strobing three colored fluorescent bulbs through filters the Sharp system ensures optimal color accuracy and eliminates misregistration for clearer reproduction.

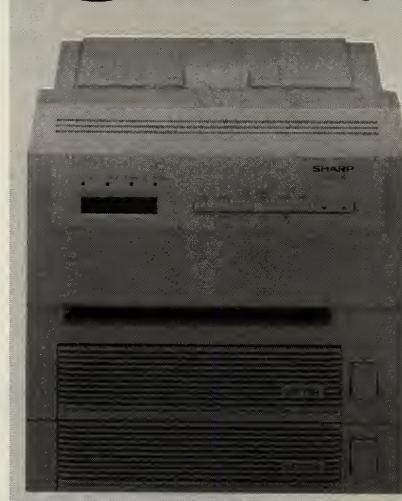
The Sharp JX-320 is the first color scanner fully compliant with the new SCSI-2 standard which eliminates the need for special drivers.

Includes the full version of PhotoShop. OCR compatible. Built-in command set includes: downloadable Gamma Tables; Edge Emphasis; Brightness; and, Lightness. 110 VAC only.

Sharp JX-320 Color Scanner 999

Transparency Option JX-32F3 799

SHARP®



\$1,599

600 dpi Printer

• 8 ppm • Mac & IBM Compatible
• RISC Processor • PostScript

AppleTalk on-board. Scalable typefaces - PostScript and PCL5 for thousands of fonts. Printer emulations include Hewlett Packard, IBM ProPrinter & Epson. Parallel and serial interface with automatic sensing - Mac's and IBM's can be on-line at the same time! 2 MB RAM (expandable to 8MB).

✓ Check us out! We keep our customers happy by offering them what they want...

✓ Quality and selection. We offer a wider choice of award-winning products. More choices makes for wiser selections.

✓ 30 day money back guarantee. You must be satisfied or we want you to return the product. We count on word-of-mouth advertising. An unhappy customer doesn't work for us.

✓ Service and security. Since 1978 Relax's commitment to customer satisfaction, has meant quality products and service. Winner of MacWorld Magazine's Service Hero Award, our sales and service team treats service very seriously

If you need help, our Express Service Program (ESP) will have you up and running in less than 48 hours - guaranteed! We even follow-up on service calls to insure that you get the help you need and that we are attaining our customer satisfaction goal.

✓ Cost Savings. We save you money on the products you want, and we'll be there to service you tomorrow. After all, how good is a "deal" if the company goes broke?

✓ Knowledgeable sales staff. We take pride in our courteous and knowledgeable sales staff. Sales and technical support goes hand-in-hand with the wide selection we offer. Each sales rep is also a product manager, so expert technical assistance isn't far away.

SyQuest Removable Drives

2-Year Warranty!



New! Mobile
88+ reads and
writes both 44
and 88 Meg.
cartridges!

\$399	\$489	\$589
Mobile 44 SQ555	Mobile 88 SQ5110	Mobile 88+ SQ5110C
Cartridge 1 to 4 5 to 9 10+	Cartridge 1 to 4 5 to 9 10+	
44 Meg. 63 61 Call	88 Meg. 98 95 Call	

Bernoulli Mac 90

\$499

Omega has enjoyed an excellent reputation for years as the provider of high quality removable storage for IBM computers. Now they have brought their years of experience to the Macintosh. 90 megabytes of storage in each data cartridge. Includes software and cables.

5-year warranty on all data cartridges!
DC2120 Cartridges - \$169

DAT, ExaByte & Teac Tape Drives & Media

Tape Drives include media, software and cables!
Tape Drives:
160 Meg. Tape Vista - TEAC 499
250 Meg. Tape Vista - Archive 699
600 Meg. Tape Vista - TEAC 779

DAT drives Include Retrospect Software!

DAT 4 mm Drives:
2.0 Gig. DAT Sierra - Archive 1,299
2.0 Gig. DAT Sierra - ExaByte DAT . 1,349
2.0 Gig. DAT - Hewlett Packard 1,399

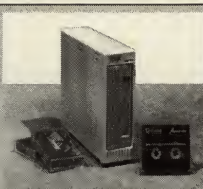
Compression DAT 4 mm Drives:
8.0 Gig. DAT Sierra - Archive 1,499
8.0 Gig. DAT Sierra - ExaByte DAT . 1,549
8.0 Gig. DAT - Hewlett Packard 1,599

ExaByte Helical Scan 8 mm Drives:
2.2 Gig. Tape Vista - ExaByte 8200 . 1,949
5.0 Gig. Tape Vista - ExaByte 8500 . 1,999

8.0 Gig.
DAT Tape

Retrospect
software & tape
included!

\$1,599



HEWLETT
PACKARD

Relax 600 Meg. Tape 779

Selected for performance, value and service. Quality at low cost. Perfect for backing up hard disks up to 600 megabytes. Complete package includes software, cables and media. MACWORLD - 12/92.



Premium Hard Disk Drives - Macintosh

Seagate 3-1/2" Half Height

	Internal	External
108 Meg. - ST1133N, 15 ms.	299	359
510 Meg. - ST1581N, 14 ms.	999	1,059
1.0 Gig. - ST11200N, 14 ms.	1,539	1,599

	Internal	External
1.0 Gig. - ST41200N, 15 ms.	1,449	1,499
1.4 Gig. - ST41651N, 15 ms.	1,659	1,719
1.9 Gig. - ST42100N, 12.9 ms.	1,939	1,999

	Internal	External
5-1/4" Full Height - ELITE Ultra-High Performance		
1.4 Gig. - ELITE-I, 11.5 ms.	2,139	2,199
2.1 Gig. - ELITE-II, 11 ms.	3,089	3,149
3.5 Gig. - ELITE-III, 11 ms.	3,939	3,999

Fujitsu 3-1/2" Half Height

	Internal	External
425 Meg. - 2623SA, 9 ms.	899	949
520 Meg. - 2624SA, 9 ms.	1,039	1,099
5-1/4" Full Height		
960 Meg. - 2266SA, 11.5 ms.	1,639	1,699
1.7 Gig. - 2652SA, 11.5 ms.	2,639	2,699

Maxtor 3-1/2" Low Profile/Low Power

	Internal	External
120 Meg. - 7120S, 15 ms.	299	349
213 Meg. - 7213S, 15 ms.	479	539
5-1/4" Full Height		
645 Meg. - XT8760, 16.5 ms.	1,399	1,459
1.5 Gig. - Panther, 13 ms.	1,799	1,859

Quantum 3-1/2" ELS Low Profile

	Internal	External
42 Meg. - ELS42, 19 ms.	189	249
85 Meg. - ELS85, 17 ms.	269	329
127 Meg. - ELS127, 17 ms.	329	389

	Internal	External
2-1/2" - Internal for the Mac PowerBook only		
80 Meg. - Go*80, 16 ms.	339	399
120 Meg. - Go*120, 16 ms.	499	559

	Internal	External
3-1/2" PDS, PRO & LPS Series		
240 Meg. - LPS240, 10 ms.	539	599
425 Meg. - PRO425, 9 ms.	899	959
1.2 Gig. - PD1225S, 11 ms.	1,839	1,899

Conner 3-1/2" Half Height

	Internal	External
42 Meg. - CP-3040, 25 ms.	199	249
85 Meg. - CP-30080E, 17 ms.	269	319
170 Meg. - CP-30170E, 19 ms.	339	399
212 Meg. - CP-30200, 12 ms.	449	499
545 Meg. - CP-30540, 12 ms.	1,039	1,099

Hewlett Packard 3-1/2" Half Height

	Internal	External
400 Meg. - HP2235, 12.6 ms.	1,199	1,259
1.0 Gig. - HP2247, 12.6 ms.	2,039	2,099
5-1/4" Full Height		
1.0 Gig. - HP97558, 13.5 ms.	1,939	1,999
1.3 Gig. - HP97560, 13.5 ms.	2,179	2,239

Special Purchase

\$439

1-Year Warranty! 12 ms. average access. Fast SCSI. External Model \$499

240 Meg. Hard Disk

Seagate

Nobody knows more about performance hard disk drives than Seagate! We made a special purchase of this top-of-the-line model. Now for a limited time, you can purchase a 240 megabyte drive for the cost of a 170 megabyte model. This is a limited time offer, and only while quantities last!

Save \$80. Regular Price \$519. Internal model for the Macintosh. Model ST3283N.

Introducing FreeLance™

Desktop performance that fits in your pocket!

Our powerful 80MB, 120MB and 160MB FreeLance drives are designed for the Apple PowerBook computers - we even use the same quality drives Apple uses! Light (less than 10 ounces) and fast (12ms seek time). The FreeLance feature quiet and reliable Quantum Go*Drives for added value. Our FreeLance Value Pack includes everything you need to work with the PowerBook including a power supply and SCSI cable for the Macintosh. The FreeLance Dock™ adds battery power and charger for convenience and extended use on-the-go.



FreeLance Drives:

80 Meg. FreeLance Go*Drive	469
120 Meg. FreeLance Go*Drive	599
160 Meg. FreeLance Go*Drive	Call

Includes your choice of 110V or 220V power supplies and a PowerBook or standard Macintosh SCSI cable.

FreeLance Dock, Battery & Charger

229 This is a complete package, including your choice of 110V or 220V charger, a PowerBook 140-180 compatible battery, transportable power cable and SCSI cable. Use the FreeLance Dock on-the-go or in the office. The battery is interchangeable with the PowerBook's. You can even fully recharge your PowerBook's battery in just 45 minutes while you're working.

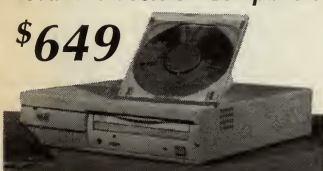
FreeLance Options:

PowerBook Battery - 140-180	49
SCSI Cable - DB25M/DB25M	19
SCSI Cable - DB25M/Cent50M	19
Adapter - DB25M/HDI30	19

Macintosh CD-ROM Players

Kodak Multisession Compatible

\$649



Toshiba CD-ROM - XM3401B..... 649

Featuring the Multisession Toshiba XM3401B. Vista CD-ROM provides state-of-the-art performance including a sealed contamination free environment and an automatic lens cleaning mechanism which dramatically improves reliability. Fast 200 milliseconds average access. Full audio control via software is provided by the Music Box software. Includes sample CD.

Toshiba CD-ROM - XM3301B..... 499

Featuring the Toshiba XM3301B. 325ms average access. Sealed contamination free environment and an automatic lens cleaning mechanism. 30-day money back guarantee. Limited offer!

\$299

Portable Player

NEC



CD-ROM - Mesa Portable 299

New! Manufactured for Relax by NEC, the Mesa is a fast, portable and fully functional CD-ROM player for music and data. Call for details about this bargain performer.

Rewritable Optical Drives

Industry Standard - ISO Certified

Macintosh - IBM Compatible
Low Cost - High Performance

Large, fast and affordable. We offer a variety of solutions for your large capacity data storage needs.

600 Meg. Optimum ISO Model 750 . 1,599

Premium Quality at Low Cost - 60 ms. access. While Supplies Last - Limited Quantity!

600 Meg. Ricoh ISO 5030E-II 1,499

Factory reconditioned. Full warranty. 67 ms. access.

600 Meg. Ricoh ISO 5031E New! ... 2,599

High performance - 35 ms. average access.

1.0 Gig. Maxoptix Tahiti-II 3,499

High capacity - 1 Gigabyte - 35 ms. average access.

600 Meg. Pioneer Multifunction 2,199

Rewritable and WORM in one unit.

600 Meg. Pioneer WORM 1,799

Premium quality, best selling WORM

Media:

	1 to 4	5+
128M 3-1/2" Optical	39	35
600M 5-1/4" Optical Plastic	99	95
600M 5-1/4" Optical P 5-Pk	475	460
600M 5-1/4" Optical Glass	169	159
1.0G Optical Glass, Maxoptix	239	229
600M Multifunction, Pioneer	179	169
600M WORM, Pioneer	109	99

New!



128 Meg. Optical

Macintosh & IBM compatible

\$999

Each 3-1/2" erasable optical cartridge holds over 120 megabytes of data! The Sierra MO (shown) is an ideal primary or backup storage device for IBM or Macintosh personal computers. Featuring the Panasonic, RICOH or EPSON drive, the Sierra MO is IBM and SONY compatible - and it is faster! Complete package - includes SCSI cable, Mac software, and power supply.

Includes media, software & cables!

128 Meg. Ricoh ISO 1,199

128 Meg. Epson ISO 1,049

128 Meg. LMSI - Panasonic 999

Verbatim

Verbatim Media:

	1 to 4	5+
128 Meg. 3-1/2" Optical	49	45
128 Meg. 3-1/2" 5-Pk	235	195
600 Meg. 5-1/4" Plastic	109	105
600 Meg. 5-1/4" P 5-Pk	495	475

6-Disc CD-ROM Mini-Changer

More than 3 Gig of Data On-Line!

\$949

Each compact, easy-loading magazine holds up to 6 different discs. Additional Mini-Changers can be daisy-chained together to create a CD-ROM library of over 20 Gigabytes of on-line information! Compatible with SUN, IBM and Macintosh. Can even be used as a CD-Audio jukebox! Full audio control via software is provided by the Music Box software (included). Includes SCSI cable, Mac software, and sample CD-ROM. New - DRM-604X. 4 times the transfer rate - 600K/Sec.

DRM-600A 6-Disc 949 DRM-604X 6-Disc . 1,499

SIMMS - Video Memory - Accelerators

1 Meg \$27 • 2 Meg \$79 • 4 Meg \$119 • 8 Meg \$279 • 16 Meg \$579

PowerBook 140/170 - 6 Meg \$219 • Quadra 900 Accelerator \$139

Mac II, IIx, IIcx, IIci & Quadra:

Classic 3 Meg. Card w/1 Meg.	79
1 Meg. - 1M x 8 - 120	27
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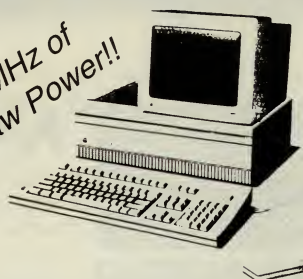
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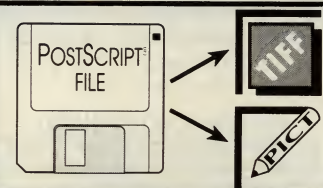
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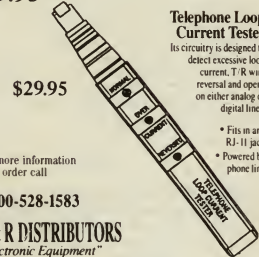
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Ejection of floppies during shutdown	IIsi, IIfi, IIfx, IIfi, Quadra 700, Quadra 950
Low-memory performance	IIfx, IIfi, all PowerBooks, all Quadras

System update

From Page 1

ed its System Enabler files for the Mac IIfx, Performa 600, and PowerBook 160 and 180 (see story, Page 4). The new Enablers reportedly incorporate the same patches as the Update file but not the improvements provided by the new Memory control panel. Mac IIfx and PowerBook 160 and 180 users should not be at risk if they run both sets of code, sources said.

Like Tune-Up, Update uses the system's Gestalt Manager to indicate that its patches are loaded. This allows third-party developers to change the behavior of their programs depending on the presence or absence of the patches.

The new extension also reported-

ly makes unspecified patches to the Mac SCSI Manager.

► **32-bit Enabler.** Another soon-to-be-released extension called the 32-Bit System Enabler offers the same functionality as MODE32, an extension Apple licensed from Connectix Corp. in 1991.

Apple has distributed MODE32 without charge to owners of Macs that lack "32-bit-clean" ROMs, including the Mac II, IIfx, IIfx and SE/30. Without the extension or the new Enabler, users of those models are unable to directly access more than 8 Mbytes of memory.

When it licensed MODE32, under pressure from owners of the "dirty ROM" models, Apple said it would eventually incorporate similar patches into its system software. □

General Magic

From Page 1

Matsushita Electric Industrial Co. and Philips N.V. plan to sell Magic Cap-based handheld communicators in 1994. Motorola will show an early version of its device, known as Alarm Clock and expected to sell for about \$1,000.

General Magic, which is based in Mountain View, Calif., has helped launch several start-up companies build products that use the technologies, sources said. The company also is collaborating with AT&T Co. to build a Telescript-enabled "electronic mall" on the telephone network (see story below, right).

Telescript will allow users to create intelligent agents that can reside on their Macintosh or within a network. An agent is a program that can perform tasks automatically based on criteria established in advance by the user. With agents users will be able to issue commands to automate such tasks as sorting and filtering mail and electronically seeking out and retrieving data residing on any network that supports Telescript.

"Telescript is tuned particularly to packaging up little agents and sending them out on the network,"

said Marc Porat, president and CEO of General Magic. "If you have a preference about anything, it can be expressed in Telescript."

Porat said his company initially will ship a Telescript kernel for Macs and Newtons. Sources said specifics about how users will interact with Telescript, such as whether Magic Cap will be incorporated in the Mac operating system, are still subject to negotiation with Apple.

Telescript will assist Mac users in gathering information to help them conduct their lives more efficiently, according to Porat.

For instance, Mac users could create an agent that scans the network for the latest information about a departing airline flight and alerts them if the flight is on time or late. Porat also said it would be possible to have agents that know a user's personal profile cruise the network for a date or the best table at a restaurant.

Telescript engines eventually will run on any network server, including AppleShare or the TCP/IP-based Internet, as well as individual devices connected to those networks, Porat said. These engines will exchange messages and communicate users' preferences

about how information should be handled.

E-mail recipients could set their mailbox to throw away electronic "junk" mail or to forward it automatically based on the name of the sender, the contents or even the time of day it arrives.

Telescript also could format messages differently depending on how they will be viewed or used. Since the technology is device-independent, any Telescript user could communicate with Macs, Newtons and Magic Cap-based devices.

For example, a Mac user could send a message from an AOC (Apple Open Collaboration Environment)-compatible application, such as a future version of Aldus Persuasion, through the Telescript kernel, which would encapsulate the file in a set of instructions and deliver it to a mailbox on the AT&T EasyLink network. If the addressee did not have a Mac, Telescript would recognize that the message contained graphics that could not be displayed and forward the file to the addressee's fax machine, which would print the Persuasion slides for viewing.

"This is a huge, ambitious project, but if there's anyone who can do it it's General Magic," said Denise Caruso, editor of Digital Media, a San Francisco-based industry newsletter. "However, if Telescript turns out to be as powerful as they say it's going to be and does all the things they say it's going to do, there are a lot of privacy issues that will have to be dealt with before it can become a widespread technology."

"I think that people are beginning to be concerned about technology having so much power over their lives," she added. "It's an issue of trust." □

LC II, IIsi prices cut; Quadra 700 next?

Apple has reduced prices drastically on several current Mac models to make room for its new desktop line. In a memo sent to dealers last month, the company announced lower suggested retail prices for the following models:

► **Mac IIsi.** Prices for all three configurations were slashed at least 40 percent. The 3/40 was reduced to \$969 from \$1,729, the 5/80 was cut to \$1,099 from \$1,999, and the 5/160 was reduced to \$1,299 from \$2,139.

► **Mac LC II.** The 4/40 configuration is now \$849, down from \$1,239. Dealer prices for other configurations also were reduced.

► **Classic II.** The 4/80 configuration was reduced to \$1,079, down from \$1,209.

Apple also is expected to cut prices on the Quadra 700 as much as 35 percent in response to the introduction of the Quadra 800.

In a separate announcement to dealers last week, Apple said it is phasing out the scarce IIsi and IIfi so they don't compete with its new low-cost '040 products. Dealers said Apple has started a "stock balancing" plan, to run through Feb. 26, that aims to redistribute returned IIfi machines to corporate users. — *By Jon Swartz*

New Macs

From Page 1

an '040 processor direct slot and built-in Ethernet. It will sell for \$4,679 to \$6,399.

► **PowerBook 165c.** Apple's first color PowerBook will feature a passive-matrix color LCD. It starts at \$3,399 for a 4/80 configuration.

Based on the PowerBook 180, the 165c will include a 33-MHz 68030 with math coprocessor, support for up to 14 Mbytes of RAM and video output. The nickel-cadmium battery will be good for one and a half to two hours of use between charges (see MacWEEK, Jan. 4).

► **Color Classic.** The first Macintosh to combine a color monitor with an all-in-one design will sell for \$1,389 in a 4/80 configuration. The 16-MHz '030-based machine will support 256 colors, which can be upgraded to 32,767, and include an internal Mac LC-style PDS.

► **LC III.** The latest Mac LC offering will sport a 25-MHz '030, a 32-bit data bus and 4 Mbytes of RAM, which can be expanded to 36 Mbytes. A math coprocessor will be optional; users also can add cards to

the Mac LC-standard PDS and expand the 512 Kbytes of video RAM to 768 Kbytes to support up to 16-bit color on displays as large as 14 inches. The LC III starts at \$1,379 in a 4/80 configuration.

► **LaserWriter Select line.** Apple's new personal laser printers, the LaserWriter Select 300 and 310, are based on a 300-dpi, 5-page-per-minute Fuji Xerox engine.

The \$1,079 Select 310 features an AMD 29200 RISC chip running 1.5 Mbytes of RAM, which can be expanded to 5 Mbytes. It will come standard with Adobe PostScript Level 1 and 39 TrueType fonts. Although it lacks LocalTalk, the 310 will ship with serial and parallel ports and Apple's new GrayShare file-sharing software. It also will include the latest version of Apple's PhotoGrade and FinePrint print-enhancement software.

The \$819 Select 300, a QuickDraw model, lacks the 310's RISC chip and parallel interface. Users will be able to upgrade to PostScript and GrayShare.

► **VGA display.** The Apple Basic Color Monitor, rolled out to education channels last month, can connect directly to any Mac or IBM PC or compatible that supports VGA output. The \$329 monitor displays 640 by 480 pixels at a 60-Hz refresh rate and features an 0.39mm dot pitch. It includes a tilt-and-

swivel base and complies with Swedish emission standards.

Apple already has cut prices on the Mac IIsi in a "clearance sale" apparently intended to reduce the company's remaining inventories of the single-slot midrange Mac to make room for the new offerings. □

For further information about this week's product introductions, check ZiffNet/Mac via CompuServe starting Tuesday.

AT&T net reaching out to Telescript

AT&T Co. will announce at the General Magic Inc. event in New York this week that its EasyLink global electronic-mail network will support Telescript to provide "enhanced network services," according to a spokesman. At first, AT&T will offer users the ability to program with Telescript the way E-mail is handled by the EasyLink system. But the system reportedly will be upgraded to support an electronic mall, code-named Main Street, where users will send their agents to meet, shop and do business.

A General Magic spokeswoman said the company had tried to facilitate several "young companies that we like" in connection with an electronic mall.

"That's in the vision, but it's

absolutely not a 1993 reality," said Marc Porat, General Magic president and CEO. "We have lots of way-out ideas that will take years to realize."

Sources familiar with the Main Street project said it could eventually make Telescript a household standard.

Porat said General Magic was founded on the idea of enabling a grass-roots information economy.

"We want anyone who decides to be an information provider to have a piece of software that they install on a \$1,200 Mac — and they're in business," Porat said.

The company and its partners will make specific announcements about Telescript and Magic Cap devices and services this summer.

— *By Mitch Ratcliffe*

New Apple peripherals

MODEL	PRICE
LaserWriter Select 300 printer	\$819
LaserWriter Select 310 printer	\$1,079
Basic Color 14" Monitor w/VGA	\$329

ARA

From Page 1

Access Control Encryption (ACE) Server from Cambridge, Mass.-based Security Dynamics Inc. The ACE system requires remote users to carry credit card-size LCD displays that generate numeric codes every 60 seconds; users must enter the current code to log into ARA servers.

Apple's version of the ACE Server will be the first to run on a Mac as a native application. Currently, ACE Server security is available for Shiva Corp.'s LanRover/E and Cayman Systems Inc.'s GatorLink, but the software must run on a Unix computer connected to the ARA server by a TCP/IP network.

Although Apple has touted the Point-to-Point Protocol (PPP) as the solution for

protocol-independent dial-in access, Apple's March release will not support PPP. Developers said Apple told them PPP will be introduced in a later version of the software.

Apple reportedly will not share its Mac-based ACE Server or multiline ARA server technology with current vendors or with the many third parties that plan to ship ARA servers this year, such as Xylogics Inc. of Burlington, Mass., and Cisco Systems Inc. Menlo Park, Calif.

Craig Brenner, AppleTalk network systems product manager for Apple, said that third parties should be prepared to compete with Apple on value-added features.

"Apple is in the software business, and it's a tough problem, because we work with [third parties] while competing with them," Brenner

said. "If their concern is competing with Apple, I can't help them. That's the economic environment we're in."

Developers, some of which contributed to the development of the original ARA protocol, said Apple has provided them little information about the new server technology.

"We'll probably end up having to reverse engineer it," one developer said. "This is the problem you have when the vendor that controls things tries to make money off it."

However, developers said they have been told the new server will be compatible with current ARA client software and that new versions of the client will be able to dial into existing ARA 1.0 servers.

"If we do a client, we are interested in having that client work for everyone," Brenner said.

In the interim, Shiva plans to begin bundling a client-only version of ARA 1.0 later this month, under an agreement signed last year with Apple's Enterprise Systems Division. Shiva apparently will be the only third-party company able to bundle the client software: ESD reportedly offered a similar deal to other vendors but withdrew it before any other company signed up. Shiva said the base price of the LanRover will not change when the client is added.

Industry sources also have begun speculating that Apple will bundle a client-only version of ARA with its PowerBooks. Apple had included the ARA client-server package with all PowerBooks until last October. Currently, the ARA client and server are available together for \$199.

Availability of client software would go a long way to salving the wounds felt by ARA developers.

"We aren't sure we should invest in the ARA protocol or try to do our own," one developer said. "Apple gains the advantage of our input, but we get stuck selling a server that Apple forces the customer to buy again in order to get client software." □

Cyclone

From Page 1

implemented SCSI-DMA in hardware (the Mac IIx), it never delivered the required system-software support. But this time a new SCSI Manager taking advantage of the hardware to accelerate disk I/O definitely will be available, sources said.

Cyclone fully implements NuBus 90, which supports faster throughput from add-on cards. The serial ports also have been supercharged; the modem port will be capable of emulating a variety of telephone standards, and with the right adapter, it can be connected directly to a wall socket.

The entire Cyclone system reportedly will operate in 32-bit mode, making it impossible for users to drop back to 24-bit mode for compatibility with older applications.

► **DSP.** The Cyclone systems will come with an AT&T 3210 DSP built in. The addition of this second processor enables a slew of new capabilities, sources said, including the ability to emulate a modem, digitize and play

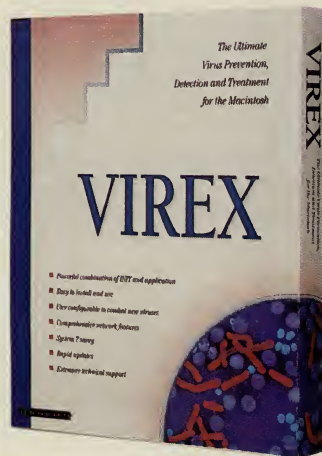
back sound at 16-bit resolution (audio CD quality), speed up data compression, and enable voice recognition.

Users eager to buy a Cyclone just for the ability to pilot their Macintosh by voice command should be warned, however, that the first implementation of Casper will have a limited vocabulary and will require software developers to add a phrase book to their applications before it will be able to control them.

Apple is expected to release a special monitor with built-in speakers and microphone especially to support Casper and the Cyclones' improved sound capabilities.

► **Video.** The Cyclone will come with in and out support for both composite and S-video built in, sources said. It will be able to "pass-through" analog video straight to the Macintosh's monitor and even display live video transparently over the Mac's desktop. It also will be able to digitize video to QuickTime format, although size and quality will be limited without the addition of an optional compressor-decompressor chip. □

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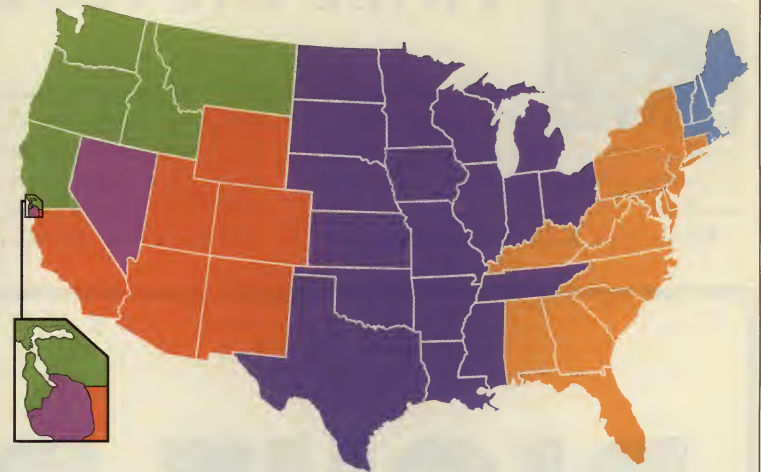
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Looking ahead



Issue date	Special section Product Watch	Close for Display ads, MarketCenter, Career Opportunities	Close for Ad Showcase
Feb 22	Presentations	Feb 11	Feb 9
March 1	Mapping software	Feb 18	Feb 16
March 8	GW Spec. Rpt. Database add-ons	Feb 25	Feb 23
March 15	Scanners	March 4	March 2
March 22	UPS hardware	March 11	March 9
March 29	Applications development Data-analysis hardware	March 18	March 16
April 5	Electronic mail	March 25	March 23
April 12	GA Spec. Rpt. Video	April 1	March 30



Twice the res in twice the time

There's a lot going on in the world today. Some would say too much. Others just sigh and resign themselves to life with an activist president.

But just as the Knife was wondering how

active one man can be and still while away all that time reading CompuServe mail came an interesting little E-mail message containing the alleged AppleLink address of the First Lady. (That title, by the way, seems like a good candidate for updating, don't you think?) In

any event, it looks as if those White House typewriters will hit the dustbin about the same time as that antiquated phone system.

And that's all good. Being connected is about the best game in town for keeping up with the breaking news. Well, actually, the

name of this game is "what new products are coming up and when can we get one."

For example, the Knife reports that both Radius and SuperMac have been counting on being among the first to get their technical mitts on C-Cube's upcoming 560 compression chip. Not surprisingly, both companies intend to base new digital video products on it that will be capable of capturing and playing 30 frames per second. But now there's word that C-Cube will be delivering the first batch in July, rather than next month as was first thought. That means you won't be seeing 560-based products from either company until the end of the year at the earliest.

There's also the small issue of add-ons outstripping the intended Mac platform. Consider that just this week SuperMac has upped the requirement for its current product using C-Cube's 550 chip to a Quadra 950 outfitted with 64 Mbytes of RAM and a big fat disk array.

Are you being served? And there's more. Those lucky attendees of next month's CeBIT in Germany are expected to be the first to view Apple's new server in public.

As reported previously, this long-awaited product will arrive in the form of a processor direct slot card designed to be dropped into a slot on an A/UX-equipped Quadra. Its most notable feature will be its increased throughput, which should allow for more active users than are possible with current schemes.

Free-market ethics. Apple's ongoing dealers-be-damned distribution policies may soon take on greater significance for the entire community, including the small third-party software-development community.

According to the Knife's in-box, Apple is getting more and more serious about third-party product sales. The first indication of this state of affairs was the Performa "exampleware" CD bundle. The next step is expected to be bundling CDs with encrypted versions of the full products in addition to the demo versions. If you like the demo, all you'll have to do is grab a credit card (preferably your own) and give Apple a call. Apple then will give you the key to unlock the full version.

This program of providing Performa customers with a nearly risk-free way to buy software and giving small developers some much-needed virtual shelf space is a win-win for almost everyone, except perhaps dealers and mail-order software outfits. But what struck the Knife as a little strange was Apple's seeming commitment to make this new program a profit center. While Apple's motives for the original program were as pure as snow, the motives for this product are, well, questionable at the very least.

Also, Apple's tentative plans to market a specially named line of Macs via mail order are still very much alive. While the Knife doubts reports that they'll bear the Dealer-NoMo label, you may just be able to order an '030 model for Christmas. Next thing you know even DEC will be peddling Macs. □

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In short, GatorLink provides access to all network resources available to Macs on the local network.

As for service and support, no one knows more about AppleTalk inter-networking than Cayman Systems. We've been in the business longer than all the rest.

Let us tell you more about GatorLink. Call Cayman at **1-800-THE-GATOR**. Fax us at 1-617-494-9270. Or e-mail us at **sales@cayman.com**. Don't choose another remote access server when you can use one that's actually in tune with the rest of your network. GatorLink.



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